The Oil and Gas Journal

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Table of Contents

Vol. 39, No. 21 — October 3, 1940

News Developments

Trends: October Allowables Show Little Change Over Previous Month 11
Sparks From the News 12
Jackson Files Antitrust Suit Against Major Companies ..... *Henry D. Ralph* 13
Summary of Allegations Against Oil Companies and the A.P.I. 14
Department Issues Statement Concerning Antitrust Suit 14
Jackson-Gillette Letters Reveal Motives for Antitrust Suit 15
Lolita Field One of Texas' Most Active ..... *Neil Williams* 16
Japan's Axis Alliance Seen as Threat to East Indian Oil ..... *J. P. O'Donnell* 17
Editorial: Come Out of the Trenches 18-19
News From the State Capitals 20
Department of Justice Explains Basis for Pipe-Line Suits 21
Skilled Oil Workers May Be Deferred From Draft 21
Excess-Profits Tax Will Have Minimum Impact on Industry ..... *F. J. Sansone* 22
Pacific Coast Industry Starts Campaign of Enlightenment 24
Deaths 24
Refinery Expansion 27
Natural-Gasoline News 27
Natural-Gas News 27
Programs and Meetings 28
Service on New Fields—Stribling Field, Stevens County, Texas 31
Pipe-Line Activity 53

Engineering—Operating

Talco Treating Methods Provide Fuel Economy and More Settling Time *George Weber* 34
Hydraulic Pumping Cost Data ..... *Dan Cox* 37
Safety: Wire-Mesh Guards Prevent Accidents 38
Procedure for Cleaning Slotted Liners Developed in California ..... *T. P. Sanders* 40
Cost of Centrifugal-Pump Power Cut by Checkup 41
Operating Ideas 42
Safety Attitude of Oil Industry Resulting in Fewer Accidents ..... *Harry F. Simons* 45
Questions on Technology ..... *W. L. Nelson* 51

Field Operations

Field Operations Summarized 55
Permian Basin,
Panhandle ..... *R. Marne Sanford* 56
N. Louisiana, Arkansas ..... *George Weber* 59
Texas Gulf Coast ..... *Neil Williams* 60
Forest City Basin 63
Kansas ..... *Dal Dalrymple* 63
Illinois 64
Oklahoma ..... *Dal Dalrymple* 67
California ..... *L. P. Stockman* 69
Louisiana Gulf Coast ..... *F. L. Singleton* 72
North Central Texas ..... *R. Marne Sanford* 73
Among Drilling Contractors 74
Eastern Texas ..... *R. Marne Sanford* 76
Southwest Texas ..... *F. L. Singleton* 77
Michigan ..... *Otto C. Pressprich* 78
Indiana, Ohio, Kentucky 79
Rocky Mountain Area ..... *T. R. Ingram* 81
Appalachian Fields 82
Mississippi ..... *George Weber* 83
Canada ..... *Victor Lauriston* 95
Wildcats ..... Included in Field Operations

Markets and Prices

Group 3 Market ..... *H. Stanley Norman* 86
New York Market ..... *J. P. O'Donnell* 87
A.P.I. Refinery Report 87
Tank-Wagon Market 88
Refinery Prices 89
Crude-Oil Prices 90

Additional Features

Personal Paragraphs 84
Equipment News 93
Classified Advertising 94-95
Advertisers' Index 96

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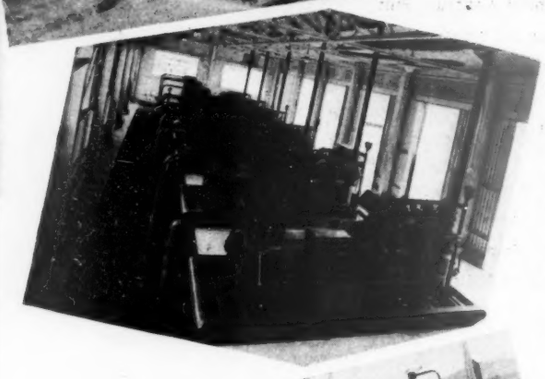
for EVERY FIELD, WELL AND OPERATING CONDITION



In nearly a decade no pumping problem has been found in any field that cannot be handled *most* efficiently and economically by the Kobe method. It is important, therefore, that production executives obtain detailed performance data on Kobe Pumps before equipping *any* well. These data, together with the full co-operation of Kobe engineering, laboratory and field departments, are available at all times to help solve your production problems. Inquiries relating to every type of production problem are invited and will be given prompt attention.

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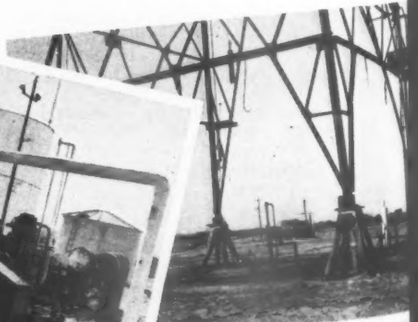

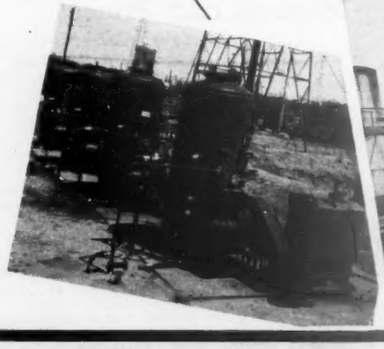

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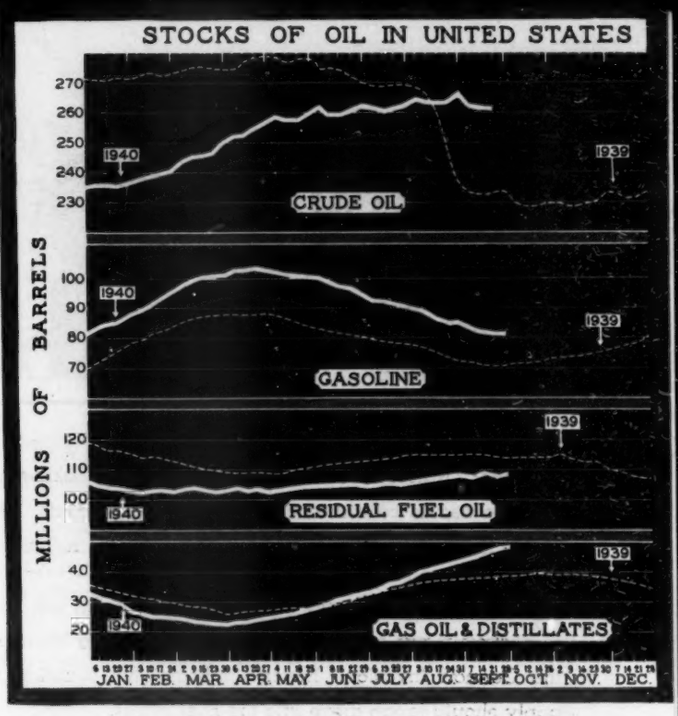
Trends

October Allowables Show Little Change Over Previous Month



AT the start of a new month, Tuesday, no substantial changes in the levels of crude production or refinery operations were in prospect. The state allowables for October so far announced add up to about the same total as the September allowables. The daily October state allowables are: Arkansas, 68,743 bbl.; California, 571,000 bbl.; Louisiana, 269,631 bbl.; New Mexico, 99,500 bbl.; Oklahoma, 390,000 bbl., and Texas (at the start of the month), 1,376,793 bbl. With the possible exception of New Mexico no effort apparently will be made to carry out the recommendation of the Interstate Oil Compact Commission of keeping national production 5 per cent under the Bureau of Mines recommendation. This plan failed in September.

CRUDE PRODUCTION *3,799,547 bbl. daily average—up 168,937 bbl. One year ago 3,647,404 bbl.*

CRUDE STOCKS *262,209,000 bbl. as of September 21—down 266,000 bbl. One year ago 232,811,000 bbl.*

GASOLINE STOCKS *82,373,000 bbl. as of September 28—down 587,000 bbl. One year ago 71,126,000.*

RESIDUAL FUEL-OIL STOCKS *108,450,000 bbl. as of September 28 — up 259,000 bbl. One year ago 114,294,000 bbl.*

GAS OIL AND DISTILLATES *47,986,000 bbl. as of September 28 — up 823,000 bbl. One year ago 38,086,000 bbl.*

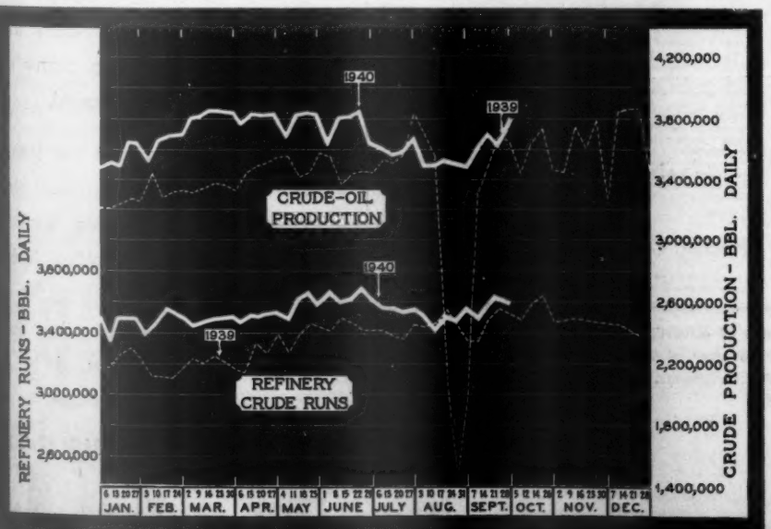
REFINERY RUNS *3,600,000 bbl. daily week ended September 28—down 80,000 bbl. One year ago 3,560,000 bbl.*

At the start of the month the crude market is reported steady except for a few scattered weak spots in Texas and Louisiana where offers or sales of crude under the posted schedules are reported.

The outstanding fall development is the strength in the low-gravity crude oils. In several areas this is accompanied by weakness in the highest-gravity grades.

This is a reflection of refinery conditions where the lowest-gravity fuel oils occupy the strongest market position in many refining centers. In this connection current statistical data reveal a situation in regard to light and heavy fuels which is the opposite of conditions a year ago.

In the fall of 1939 there was a more than average gain in demand for distillates and other overhead fuels. Stocks were approximately 10 million barrels less than they are now. This situation was in part responsible for the high operating levels through the fall and winter months.


CRUDE-OIL PRODUCTION
REFINERY CRUDE RUNS
1940
1939
REFINERY RUNS - BBL. DAILY
CRUDE PRODUCTION - BBL. DAILY
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

DAILY AVERAGE PRODUCTION FOR WEEK

	Sept. 28, 1940	Bur. Mines Sept. est. of demand	September state allowables	Sept. 21, 1940
Arkansas	74,445	69,700	74,595	72,550
California	587,750	593,000	571,000	610,750
Eastern states	104,900	101,200	.....	103,800
Illinois	360,267	430,000	.....	361,317
Kansas	193,550	170,700	190,000	201,700
Louisiana	283,428	274,700	274,854	284,640
North Louisiana	*64,380*	.....	.....	*65,490*
Louisiana Gulf Coast	*219,048*	.....	.....	*219,150*
Michigan	50,276	55,700	52,000	50,250
Mississippi	22,478	9,700	.....	26,285
New Mexico	99,620	105,300	100,300	99,080
Oklahoma	403,725	397,000	390,000	402,350
Rocky Mountain states	101,820	97,000	.....	101,240
Texas	1,517,288	1,320,000	1,369,443	1,316,648
East Texas	*448,046*	.....	.....	*374,848*
West Texas	*254,100*	.....	.....	*229,875*
North Central Texas	*167,150*	.....	.....	*127,600*
East Central Texas	*78,097*	.....	.....	*74,775*
Texas Panhandle	*79,297*	.....	.....	*78,250*
Gulf Coast Texas	*376,450*	.....	.....	*324,350*
Southwest Texas	*114,148*	.....	.....	*106,950*
United States	3,799,547	3,624,000	.....	3,630,610

This year the residual fuel oils are the strongest products, with inventories several million barrels under a year ago. The upturn in industry due to the defense program has greatly increased practically all the demands for the low-gravity fuels and prices are firm or advancing at most coastal points. This situation has developed despite the increased imports of low-gravity crudes and fuel oils.

Many economists feel that the statistical position of refinery products with the exception of gasoline is better than it was a year ago. They do not believe that refiners will expand their operations to supply a residual-fuel-oil demand as they did last year to take care of the enlarged consumption of distillates. One economist predicts a lower level for refinery operation later this month. He believes by that time many refiners will know that they have enough supplies on hand to take care of their sales of light fuels including kerosene and they will then give consideration to reducing their operations to the point where they can continue the reduction in excess gasoline inventories.

SPARKS . . . FROM THE NEWS

EFFORT: Natural-gasoline manufacturers are making a mighty effort to secure satisfactory prices for their products. The 26-70 grade is still below the posted crude schedules in Texas.

DIFFERENT: France and the Low Countries did not have time to destroy many of their oil properties including storage during the German invasion. Reports indicate this situation will not apply should Japan move into the East Indies.

WILDCAT ACTIVITY: The decline in Illinois production has brought several important developments including more activity by wildcatters in other parts of the country. Entirely new areas will see the drilling rigs over the next few months.

UNWANTED COMEBACK: National crude-oil production last week jumped to the highest level since June. The output was excessive then—more so now.

PLOTTING FOOTBALL: This is the time of the year when the statisticians start calculating what the filled football stadia mean in increased motor-fuel and motor-oil consumption.

UNDER THE HAT: Rumors are running wild concerning the activity in leasing and seismograph work going on in the windblown wastes between Nebraska and the Canadian border.

COMPETITION: Oil buyers spread facilities to fields last week in Arkansas, Nebraska and Texas in direct competition with other purchasers. Replacement of losses in Illinois is still apparent in pipe-line developments.

HIGH AND LOW: A reading of the antitrust suit filed Monday leads to the conclusion that prices in this industry are too high for consumers and too low for fair competition. Only a government investigator could figure this out.

CHOICE: E. O. Thompson of the Texas Railroad Commission will soon have to decide between the titles of commissioner or colonel of the Texas National Guard.

WAR RESTRICTIONS: Canada presents the latest evidence that war is no stimulator of petroleum consumption. To protect her exchange the dominion, which is this country's best petroleum customer, will restrict new consumption.

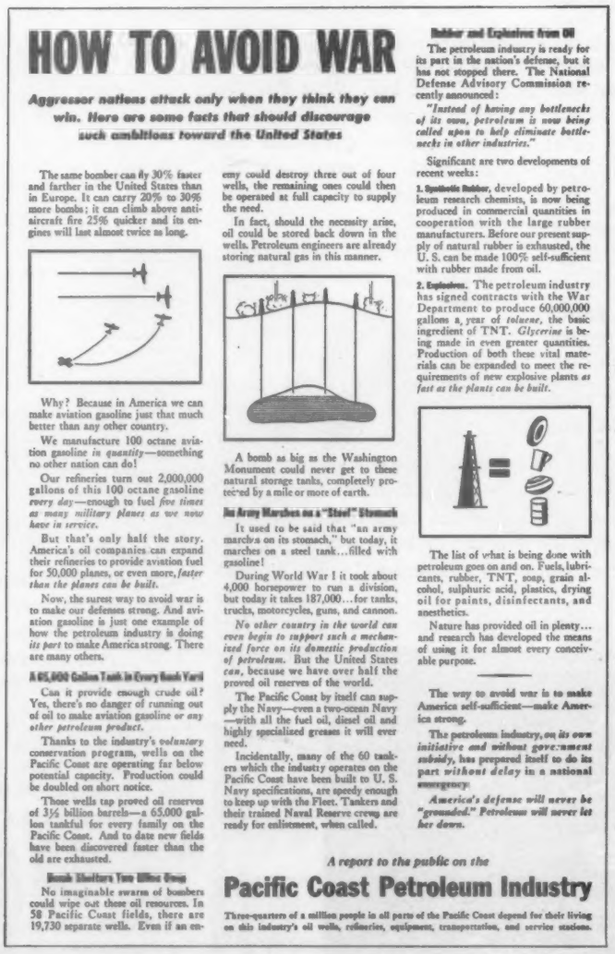
REPLACEMENTS: The British bought $843,803 worth of refinery equipment in this country in July. Total purchases in 1939 were valued at $180,028.

FIRST AGAIN: Sandoval, the Illinois field which first obtained Devonian production, may again lead the parade. A Trenton test is scheduled for that field.

LONGER LIFE: An automatic hookoff device which can be installed on wells pumping from a central power may be an important factor in extending the lives of stripper wells, many of which are being plugged.

REAL ATTITUDE: In the latest suit against the oil business the Department of Justice makes friendly gestures to the independents. The real attitude of the Government toward small operators will be found in a study of the new tax bill.

INDUSTRY SHEDS ITS MODESTY . . .



HOW TO AVOID WAR

Aggressor nations attack only when they think they can win. Here are some facts that should discourage such ambitions toward the United States

The same bomber can fly 30% faster and farther in the United States than in Europe. It can carry 20% to 30% more bombs; it can climb above anti-aircraft fire 25% quicker and its engines will last almost twice as long.

Why? Because in America we can make aviation gasoline just that much better than any other country.

We manufacture 100 octane aviation gasoline *in quantity*—something no other nation can do!

Our refineries turn out 2,000,000 gallons of this 100 octane gasoline *every day*—enough to fuel *five times as many military planes as we now have in service.*

But that's only half the story. America's oil companies can expand their refineries to provide aviation fuel for 50,000 planes, or even more, *faster than the planes can be built.*

Now, the surest way to avoid war is to make our defenses strong. And aviation gasoline is just one example of how the petroleum industry is doing *its part* to make America strong. There are many others.

A 85,000 Gallon Tank in Every Back Yard

Can it provide enough crude oil? Yes, there's no danger of running out of oil to make aviation gasoline *or any other petroleum product.*

Thanks to the industry's *voluntary* conservation program, wells on the Pacific Coast are operating far below potential capacity. Production could be doubled on short notice.

Those wells tap proved oil reserves of 3½ billion barrels—a 65,000 gallon tankful for every family on the Pacific Coast. And to date new fields have been discovered faster than the old are exhausted.

Bomb Shelters Two Miles Deep

No imaginable swarm of bombers could wipe out these oil resources. In 58 Pacific Coast fields, there are 19,730 separate wells. Even if an enemy could destroy three out of four wells, the remaining ones could then be operated at full capacity to supply the need.

In fact, should the necessity arise, oil could be stored back down in the wells. Petroleum engineers are already storing natural gas in this manner.

A bomb as big as the Washington Monument could never get to these natural storage tanks, completely protected by a mile or more of earth.

An Army Marches on a "Steel" Stomach

It used to be said that "an army marches on its stomach," but today, it marches on a steel tank...filled with gasoline!

During World War I it took about 4,000 horsepower to run a division, but today it takes 187,000...for tanks, trucks, motorcycles, guns, and cannon.

No other country in the world can even begin to support such a mechanized force on its domestic production of petroleum. But the United States *can*, because we have over half the proved oil reserves of the world.

The Pacific Coast by itself can supply the Navy—even a two-ocean Navy—with all the fuel oil, diesel oil and highly specialized greases it will ever need.

Incidentally, many of the 60 tankers which the industry operates on the Pacific Coast have been built to U. S. Navy specifications, are speedy enough to keep up with the Fleet. Tankers and their trained Naval Reserve crews are ready for enlistment, when called.

Rubber and Explosives from Oil

The petroleum industry is ready for its part in the nation's defense, but it has not stopped there. The National Defense Advisory Commission recently announced:

"Instead of having any bottlenecks of its own, petroleum is now being called upon to help eliminate bottlenecks in other industries."

Significant are two developments of recent weeks:

1. **Synthetic Rubber,** developed by petroleum research chemists, is now being produced in commercial quantities in cooperation with the large rubber manufacturers. Before our present supply of natural rubber is exhausted, the U. S. can be made 100% self-sufficient with rubber made from oil.

2. **Explosives.** The petroleum industry has signed contracts with the War Department to produce 60,000,000 gallons a year of *toluene*, the basic ingredient of TNT. *Glycerine* is being made in even greater quantities. Production of both these vital materials can be expanded to meet the requirements of *new explosive plants as fast as the plants can be built.*

The list of what is being done with petroleum goes on and on. Fuels, lubricants, rubber, TNT, soap, grain alcohol, sulphuric acid, plastics, drying oil for paints, disinfectants, and anesthetics.

Nature has provided oil in plenty... and research has developed the means of using it for almost every conceivable purpose.

The way to avoid war is to make America self-sufficient—make America strong.

The petroleum industry, *on its own initiative and without government subsidy,* has prepared itself to do its part *without delay* in a national emergency.

America's defense will never be "grounded." Petroleum will never let her down.

A report to the public on the

Pacific Coast Petroleum Industry

Three-quarters of a million people in all parts of the Pacific Coast depend for their living on this industry's oil wells, refineries, equipment, transportation, and service stations.

Here is the first of a series of advertisements the Pacific Coast petroleum industry is running to tell the story of the industry's preparedness. The ads are currently running in 900 newspapers. An account of the program appears on Page 24 of this issue

Jackson Files Antitrust Suit Against Major Companies

By HENRY D. RALPH

WASHINGTON, D. C., Sept. 30.—The long-threatened antitrust suit against 22 major oil companies and the American Petroleum Institute was filed by the Department of Justice today in the U. S. District Court for the District of Columbia.

The critical report on the proposed suit made 10 days ago by the National Defense Advisory Commission influenced the department to modify the suit to the extent of not specifically and immediately asking complete disintegration of the major companies and divestiture of their transportation and marketing facilities, but the way is left open for this to be done in the discretion of the court or through an amendment to the suit at a later date.

Even without the divorcement request, the suit is one of the largest antitrust cases in history, and department officials believe it will be in the courts for 5 or 6 years. It is a civil, rather than a criminal, case and seeks to enjoin the companies from alleged illegal practices. An injunction of the scope asked in the complaint would result in a complete change in the corporate and economic situation in the oil industry and probably would require different methods of doing business in all branches.

Practices complained of cover the entire range of the industry, from crude production to filling station. The suit charges that the 22 majors, working in collaboration and through the American Petroleum Institute, fix crude-oil prices; restrict crude production; compel independent producers to sell to the majors instead of to independent refiners; prevent independents from using pipe lines; maintain excessive transportation rates for pipe line, tanker, barge, tank car and other services and force the railroads to establish rates favorable to them; control bulk plants and wholesale distributors; force filling stations to handle major-company products and follow major-company distribution practices; fix retail prices; establish exorbitant-price differentials between grades of gasoline, and fix jobbers' margins.

Seeks Dissolution of A.P.I.

The suit asks dissolution of the A.P.I., injunctions against the practices mentioned, and "general relief" with respect to the organization, functioning, and operation of the defendants.

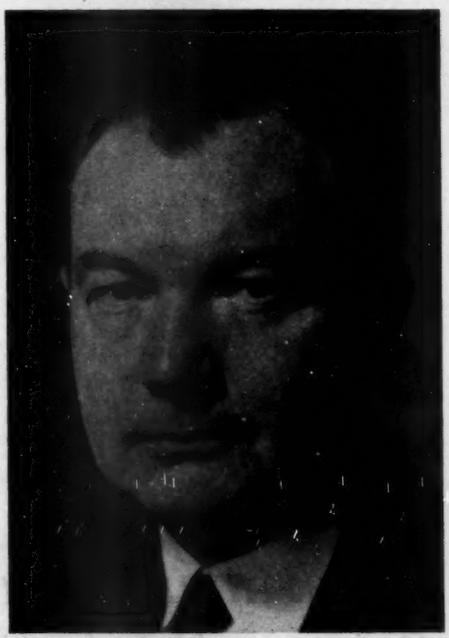
In addition, the department announced it would file separate suits in Indiana and Delaware against three pipe-line companies charging them with violating the Elkins Act by giving rebates to major-company shippers by means of dividends to the majors which own the pipe lines.

The actual complaint in the major-company suit is a lengthy document, but a summary of it was issued by the department together with a statement of policy. At the same time the department released a letter from Atty. Gen. Robert H. Jackson to Sen. Guy M. Gillette of Iowa commenting on the suit. Both these documents are printed elsewhere in this issue.

In his letter to Senator Gillette the attorney general declared that he accepted the recommendations of the Defense Commission and therefore was filing a civil suit seeking to prevent existing abuses, but is not seeking divestiture because this would make it difficult to secure capital to operate transportation facilities. He added, however, that the department has not abandoned its desire to disintegrate the major companies and left the inference that divorcement will be sought at a later date.

The attorney general urged Senator Gillette to proceed with his pending bill to divorce the majors from pipe-line control, and he added that in his opinion the antitrust laws should be modified so as not to compel competition in oil production, but at the same time he criticized what he called private conservation plans of the majors.

The filing of this suit is the culmination of many months of effort by the Antitrust Division of the Department of Justice. It is no secret that Asst. Atty. Gen. Thurman Arnold and the rest of the Antitrust Division have not been satisfied with the results of the Madison oil and the Ethyl Gasoline



ATTY. GEN. ROBERT H. JACKSON
Charges oil industry with 15 alleged abuses in violation of antitrust laws. A veteran New Dealer he took over his present duties early this year

Corp. suits. While they won sweeping legal victories in both these cases and secured decisions which can be used as precedents for many situations in all industries, neither case resulted in what Mr. Arnold calls economic relief. In his view neither consumers nor independents are any better off than before these suits were brought. Therefore he decided to attack all important practices and even the business structure of the major oil companies in one grand effort to force the industry to dissolve into a large number of small units which will compete with each other according to the concept of competition Mr. Arnold has expounded on many occasions.

Anticipated results of this suit, as outlined in the department's statement, include higher prices for crude oil, a free competitive field for independent refiners, lower prices to consumers for refined products, and better conservation practices in crude production.

There are 69 charges in the complaint, each detailing some aspect of the industry wherein it is alleged the majors engage in some unlawful practice. Probably the most significant and all-embracing charge, and one which will be subject of greatest controversy, is No. 58, entitled "Combinations." This paragraph, it is understood, was substituted for detailed charges seeking divestiture and which were eliminated as result of defense-commission report. Some observers feel this may be an attack on bigness and may be basis for later asking divestiture. Charge 58 reads:

"The 22 integrated major companies are engaged in the production, refining, tansportation, and marketing of petroleum and its products while a large number of nonintegrated independent companies engage in one or more but not all of those branches of the industry. Each of the integrated companies is a large combination of capital and individuals possessing great economic powers including the power to handicap or even stifle effective competition by the nonintegrated companies. Moreover, all of these integrated companies operate in effect as one unit under substantially identical business policies and practices. Through the control of oil reserves, wells, transportation, and marketing facilities, the 22 companies have been able to restrict the production of independent producers, exclude independents from the use of transportation and marketing facilities, and fix the price of petroleum and its products. In an attempt to prevent such restraints, the Government has successfully prosecuted numerous actions against the majors. However, such piecemeal prosecutions have not resulted in the restoration of free competition or prevented the recurrence of such arrangements because of the power inherent in the combinations continued to exist."

Assert Iowa Plan Illegal

Other paragraphs of the complaint assert that the Iowa plan is illegal and that exclusive dealer contracts violate the Clayton Act. The Robinson-Patman Act is declared violated in making quantity discounts, but no relief is sought under this act. Trade journals are referred to but not named, complaint charging that majors cause sellers to report high fixed prices, thus misleading the journals. Ethyl Gasoline Corp. marketing practices are referred to but no specific relief is asked. Among other charges are that majors have bogus independents initiate local price cutting to eliminate independent competitors, and that majors force railroads to terminate leases of track-side operators. A general charge is that majors suppress technologic improvements and deny the benefits to the public. Another is that majors force crude-production methods which are not

true conservation policies but are on the principle of price maintenance.

Among specific prayers for relief are requests for injunctions preventing defendants operating common-carrier crude-oil gathering pipe lines as private carriers, and preventing them from acquiring crude reserves when the purpose and effect is to restrain or monopolize any part of interstate or foreign commerce.

The three Elkins Act cases were also filed today in Delaware and Indiana. Department officials explained these three were picked as typical examples for test cases. The Great Lakes case is an example of nine joint owners using a line exclusively and getting dividends which the suit claims are illegal rebates. Stanolind is an example of 100 per cent ownership of a pipe-company, and Phillips is an example of a pipe-line being an operating department of a major company. All three suits are similar, but the Government asks triple damages in Phillips and Stanolind cases which are brought against the owners, while Great Lakes is brought against the pipe line and not the owner-shippers.

The 22 defendant oil companies are: Atlantic Refining Co.; Barnsdall Oil Co.; Cities Service Co.; Consolidated Oil Corp.; Continental Oil Co.; Gulf Oil Corp.; Mid-Continent Petroleum Corp.; Ohio Oil Co.; Phillips Petroleum Co.; Pure Oil Co.; Shell Oil Co., Inc.; Skelly Oil Co.; Socony-Vacuum Oil Co., Inc.; Standard Oil Co. (Calif.); Standard Oil Co. (Ind.); Standard Oil Co. (Ky.); Standard Oil Co. (N. J.); Standard Oil Co. (Ohio); Sun Oil Co.; Texas Corp.; Tide Water Associated Oil Co., and Union Oil Co. of California.

There are approximately 300 subsidiary and affiliated companies of the 22 major defendants involved in the bill of complaints.

Summary of Allegations Against Oil Companies and the A. P. I.

FOLLOWING is a summary of allegations of the complaint filed in the U. S. District Court for the District of Columbia against 22 major oil companies and their subsidiary and affiliated companies, and the American Petroleum Institute.

Among other things, the complaint alleges:

That the defendants have conspired to fix and maintain uniform, noncompetitive prices to be paid by them for the crude oil purchased from independent producers, and to be charged by them for crude oil sold to independent refiners. It is alleged that prices agreed upon to be paid for crude oil purchased from independent producers are posted by one of the defendants and followed by the others, and that in fields where independent refiners compete with the defendants in the purchase of crude oil higher prices are fixed, thus putting the independent refiners at a competitive disadvantage and driving them from the market. Through their activities, defendants control practically all of the supply of crude oil available for refining; hence, independent refiners, most of whom do not have independent sources of crude oil, are compelled to purchase all or a large part of their requirements from the defendants at prices fixed by agreement, thereby placing independent refiners at a substantial price disadvantage.

Allege Conspiracy to Restrict Production

That defendants have conspired to restrict the production of crude oil and the manufacture of petroleum products. These restrictions, it is alleged, are accomplished in part through a system of reports made to the American Petroleum Institute covering the amounts and locations of all stocks of petroleum products owned or held by each of the defendants. From these reports the Institute is able to make suggestions as to the amounts of petroleum products which should be manufactured and maintained in storage. These amounts are less than the amounts which would normally be produced and manufactured. It is alleged that the Institute's suggestions are adopted by the defendants, thereby accomplishing the restrictions. It is charged that the defendants have agreed to receive in their crude-oil gathering lines from independent producers who are dependent upon such lines for transportation, less crude oil than the amounts which such independents would normally produce thereby reducing the amount of crude oil produced by the independent producers.

That the defendants who control pipe-line gathering systems leading from producing wells to their own crude-oil trunk pipe lines, have conspired to compel those independent producers who have no other practical means of transportation to competitive markets, to sell crude oil to the defendants at the well rather than permitting the independents to use such lines on a common-carrier basis. Thereby the defendants gain control at the well of the crude oil produced by such independent producers.

That the defendants have agreed to adopt and file with the Interstate Commerce Commission tariffs, rules, and regulations covering the interstate transportation of crude oil, gasoline, and petroleum products which require shippers to tender unreasonably large quantities (commonly called "minimum tenders"), to maintain uniform noncompetitive, onerous, and oppressive rates, and to fail to provide shippers with the ordinary common-carrier terminal facilities. These tariff requirements are put into effect for the purpose of reserving such pipe lines as private carriers for the defendants who are themselves large shippers. The result is that independent producers and refiners are precluded from using the crude-oil trunk pipe lines on a common-carrier basis, and from locating their refineries at advantageous points along such pipe lines or at their terminals in large consuming areas; and also to preclude independent refiners and distributors from using gasoline pipe lines on a common-carrier basis.

That defendants have conspired to charge excessive rates for the use of crude-oil and gasoline pipe lines and to receive back as refunds and rebates on the rates charged to themselves a substantial part of the revenue from pipe-line operations.

That defendants have conspired to cause railroads to establish and maintain rates favorable to them and unfavorable to independent refiners.

That defendants jointly and individually have acquired a dominant control over tankers, barges, tank cars, and other transportation facilities, and have conspired to maintain excessive rates for the use of such facilities, thereby preventing their use by independent competitors.

That defendants have conspired to distribute their petroleum products only through facilities operated by persons or companies whose buying, selling, and operating policies defendants can control, and they have thus obtained control over practically all of the thousands of bulk plants located throughout the United States through which petroleum products pass from refineries to service stations. Various illegal practices are alleged in connection with the acquisition of these bulk plants.

That defendants have conspired to distribute their products only through service stations whose policies they can control. Such control is acquired through ownership, leases, subleases, exclusive dealer contracts, granting of differentials in price to exclusive operator-purchasers while denying them to competing nonexclusive operator-purchasers, granting nationwide credit-card service to exclusive operators, offering inducements such as loans of money and guaranteed margins, loaning of equipment, and threats of ruinous competition, for the purpose of monopolizing service-station outlets.

That defendants have conspired to put into effect a plan whereby through ownership or lease of service stations they compel operators to handle exclusively the defendant-lessor's brand of petroleum products.

That defendants discriminate in the prices of petroleum products in favor of the service stations which they own or control and against the independently owned and controlled service stations.

That defendants have agreed upon a price-fixing program covering the sales prices for petroleum products, marketing and price policies, methods and practices for fixing prices and "stabilizing" price structures, for lowering prices wherever they wish to eliminate independent competitors and raising prices wherever the competition of independent competitors has been eliminated. It is alleged that these agreements are reached at frequent meetings held under the auspices of the Institute. Various details of the alleged price-fixing plan are set out in the complaint.

That defendants have agreed upon uniform and exorbitant price differentials between various grades of gasoline.

That defendants have agreed to maintain prices at which they require their jobbers, distributors, and service stations to sell petroleum products, and upon the margins allowed the distributors between their purchase and resale price. These margins are such that independent jobbers, distributors, and service-station operators are either barely able to meet their cost of operation or are compelled to sell at a loss and are thereby disenabled to compete with the defendants.

That the defendants have unlawfully combined to create and utilize the American Petroleum Institute and its national, regional, state, and local committees as an instrumentality for promoting, supervising, and enforcing the various illegal policies and practices set forth in the complaint.

The complaint prays for an injunction against the continuance of the above practices and other practices alleged, and it also seeks the dissolution of the Institute. In addition to the relief specifically sought, the complaint contains a prayer for general relief with respect to the organization, functioning, and operation of the defendants, as the court may deem proper.

Department Issues Statement Concerning Antitrust Suit

THE Department of Justice has issued the following statement concerning the action of the department in bringing suit against major oil companies. This statement reviews the status of the industry, and its reasons for instituting suit.

Extent of Control of the Industry

These defendant major oil companies own or control at the present time 60 per cent of the investment in the industry, 68 per cent of the crude-oil reserves, 50 per cent of the production of crude oil, 92 per cent of the stocks of crude oil, 79 per cent of the crude-oil storage capacity, 90 per cent of the imports of crude oil, 85 per cent of crude-oil trunk pipe-line mileage, 96 per cent of the crude oil transported in trunk pipe lines, 76 per cent of the crude-oil refining capacity, 87 per cent of the cracking capacity, 85 per cent of gasoline production, 95 per cent of the exports of gasoline, 96 per cent of gasoline pipe-line mileage, 87 per cent of the dead-weight tonnage of oil tankers, 88 to 93 per cent of the stocks of the principal petroleum products and 75 per cent of all the bulk plants and service stations.

This proceeding is being instituted under the department's policy of taking up in a single investigation or proceeding all of the restraints which affect the distribution of a product from the raw material to the consumer. Only in this way can economic results be achieved. Piecemeal prosecutions against segments of an industry are both costly and inconclusive. They do not raise the fundamental issues which the court should

decide, and therefore do not clarify the law. They allow restraints of trade to flourish in one segment of the industry while they are being prosecuted in another.

In the past 10 years, the department has been flooded with complaints from independents and consumers against various practices in the oil industry. These complaints have resulted in a series of piecemeal prosecutions in all of which the Government has been successful. Yet in spite of the success of these prosecutions, the complaints continue, prices are still inflexible, independent enterprise is still under a handicap, because the cases applied only to segments rather than to the entire structure of the industry.

For this reason the present action is brought. It will eventually present to the Supreme Court of the United States for final decision all of the issues with respect to the reasonableness of the present vast combinations in the production, transportation, refining and distribution of petroleum products.

Interest of Consumers

The emphasis of this action is not only on the interests of independents but on the interests of consumers who have not as yet benefited from the recent successful prosecutions in the Ethyl Gasoline case and the Madison oil case. In both of these cases the major oil companies had put a floor under gasoline prices. In the Ethyl case it was established that the differential between regular and high-test gasoline was fixed at 2 cents in spite of the fact that the difference in cost was far less. In spite of these cases the differential still exists at 2 cents because of the policies and practices of the defendants and the price of gasoline continues at its present inflexible level.

It is believed that the great advances and technological improvements in the oil industry are not being passed on to consumers because of a wasteful, inefficient distribution system which leads to excessive prices. Through their domination of all phases of the industry the major companies have created a system which has lead to identical policies with respect to price and the suppression of free and independent enterprise. That system has given the consumer a wasteful and uneconomic distribution of gasoline, fuel oils, lubricants, and kerosene. It has eliminated competing enterprise. It has destroyed the opportunity for new enterprise and capital to enter the field. It has established a small group of individuals in control of a 15-billion-dollar industry under a system where there is no incentive to compete among themselves and every incentive to prevent the entry into the market of those who would otherwise sell to consumers at lower prices. This system has closed the door to any new initiative in the oil industry which might disturb the settled policies with respect to production, transportation, refining, and marketing.

The unreasonable power possessed and exercised by the integrated companies has deprived the consumer of natural advantages due to location. It has taken from the consumer the opportunity to purchase a variety of products. It has withheld from the consumer the benefits of technological improvements which should be reflected in lower costs. It has fostered and preserved an uneconomic, duplicative, and wasteful marketing system. And finally the power of the integrated companies has determined the production of oil, necessary for the safety of the nation, not on true conservation principles, but on the principle of price maintenance.

Anticipated Results of the Action

If the department succeeds in this action, independent producers should receive higher prices for their crude oil, and independent refiners should be able to compete with the major oil companies. With competition restored to the oil industry, gasoline, fuel oils, kerosene and lubricants should be sold at lower prices to the consumer who should then receive the benefits of technological improvements, and the opportunity to purchase a variety of products. Lower prices for petroleum products are of great importance to the Government in its defense program. Finally the production of oil should then be determined not on the basis of price maintenance but on true conservation principles.

Additional Suits Under the Elkins Act

The principal suit, above described, will be supplemented by three suits; one against the Phillips Petroleum Co. and the Phillips Pipe Line Co. in the District Court of the United States for the District of Delaware; one against the Great Lakes Pipe Line Co. in the same district; and one against the Standard Oil Co. of Indiana in the northern district of Indiana, Hammond division. These three suits were selected as representative proceedings to clarify the law with respect to all cases where pipe lines are owned by the major oil companies. They charge the major oil companies involved with taking rebates from common-carrier pipe lines on the oil which the majors ship. The method by which these rebates are alleged to be taken is as follows: The major oil companies own the capital stock of the pipe-line companies, pay the published tariff rates and receive refunds from such rates under the guise of dividends on the stock. During the year 1939, the net earnings of the Phillips Pipe Line Co. amounted to 49 per cent of transportation revenues; the Great Lakes Pipe Line Co., 49.5 per cent; and the Stanolind Pipe Line Co. 36 per cent. These earnings are paid back in the form of dividends to the major oil companies which ship the oil, thus giving the major-oil-company shippers a tremendous advantage over their independent competitors.

This, the Department of Justice contends, is an illegal rebate under the Elkins Act.

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Jackson-Gillette Letters Reveal Motives for Antitrust Suit

WASHINGTON, D. C., Sept. 30.—Atty. Gen. Robert H. Jackson today made public the text of his reply to Sen. Guy M. Gillette in reference to the proposed antitrust suits against the petroleum industry. In his letter, addressed to Mr. Jackson, Senator Gillette threatened to seek a congressional investigation if the proposed suit to disintegrate 22 major oil companies was not filed. He wrote that he "must not let this session of Congress be adjourned or recessed without some action relative to this legislation."

The senator denied wanting to do anything or say anything which might jeopardize or delay national-defense preparation, but said that he believed that any possibility of such result is removed entirely by the suggestion of Thurman Arnold that the last paragraph of the prayer in the petitions should state:

"Plaintiff prays for such further and other relief as the court may deem proper and in considering such relief, or in considering any of the specific relief herein prayed for, that the court hear all relevant testimony as to the effect of such relief on the problem of national defense to the end that no combination necessary for national defense be improvidently held to be illegal."

Attorney General Jackson's reply follows:

My dear senator:

After considering your letter of September 18, urging commencement of the suits proposed by the Antitrust Division against the petroleum industry, and after studying the report of the Defense Commission, I beg to answer your letter as follows:

As national defense is the paramount problem facing the American people today, I am accepting the recommendations of the National Defense Advisory Commission and, in accordance therewith, have taken the following steps:

1. The Defense Commission advised me that it would wholeheartedly approve "any appropriate legal action brought to eliminate such restraints on competition where they are proven to exist." In accordance therewith I have authorized the Antitrust Division to commence the proposed civil action so far as it seeks to prevent existing abuses in the oil industry, including price fixing, discriminations, and all practices which tend to restrain or prejudice the independents in the industry or to jeopardize the interests of consumers.

2. The Defense Commission indicated that a court decree of divestiture at this time would create a number of serious problems for the national defense. Accordingly, this action does not seek at this time to compel the oil companies to get rid of their pipe lines, barges, or other facilities for the transportation and distribution of petroleum. I believe there might be serious consequences from a disruption of these facilities at a time when we have no capital presently willing, so far as I am able to ascertain, to acquire and operate these facilities by themselves.

3. The National Defense Commission, however, referring to the divestiture phase of the case, says "the commission does not suggest that the proposed suit should be abandoned." It is not being abandoned, and no action is being taken inconsistent with divestiture proceedings, either in a later action or by amendment of proceedings in the existing suit if, at the time of trial, it shall appear that the abuses in the oil industry can be corrected in no other way.

I noted with interest your suggestion that you "must not let this session of the Congress be adjourned or recessed without some action relative to" certain legislation which you have sponsored. I see no reason why the pendency of this action in any form should interfere with or delay legislative consideration of the problems of the oil industry. We know from the history of antitrust cases that many years lapse between commencement of a case and its ultimate decision. Moreover, court decrees are in the main negative affairs forbidding certain acts, combinations and contracts. They do not necessarily lead to constructive steps in industry. In shaping legislation the Congress can provide a comprehensive and constructive plan.

The statement most significant to me in the report of the Defense Commission has been almost wholly overlooked in the discussion of these cases. It states "though by simple arithmetic it would appear that the country's reserves are good for more than 10 years under emergency conditions, declining production and higher prices for petroleum will arrive long before exhaustion of reserves unless the discovery rate is maintained and production is effected with a minimum of waste." The very fact that in considering national defense we begin to calculate the life of our oil reserves in such small figures is an ominous sign for national defense and for our economic life.

In advocating revision of the antitrust laws over 3 years ago to make them effective and clear, I repeatedly said that in my opinion the doctrine of compulsory competition embodied in the antitrust laws is unwisely applied to oil production where the principle of conservation of an exhaustible and irreplaceable national resource should replace the principle of competitive exploitation. The companies seem to recognize this for they have tried to limit depletion by devices of their own, but without representation of the public interest or the consumer welfare, or that of smaller producers. Private conservation plans which restrain or discriminate against independents and disregard consumer interests violate the antitrust laws, but they should not be replaced by a headlong race to exhaust petroleum supplies, but rather by a conservation plan which will be in the public interest.

Only Congress can protect the future economic life of this country by protecting oil reserves in the ground. It has made several efforts to do so, some of which have failed. I believe more comprehensive plans could be devised now which would be successful. Litigation by itself will never completely accomplish the wise utilization of this great asset by this generation or its conservation for the future.

Therefore, I urge that you do not let the pendency of litigations delay or deter the Congress from giving this basic industry consideration in the interests of conservation and orderly utilization of our basic petroleum resources.

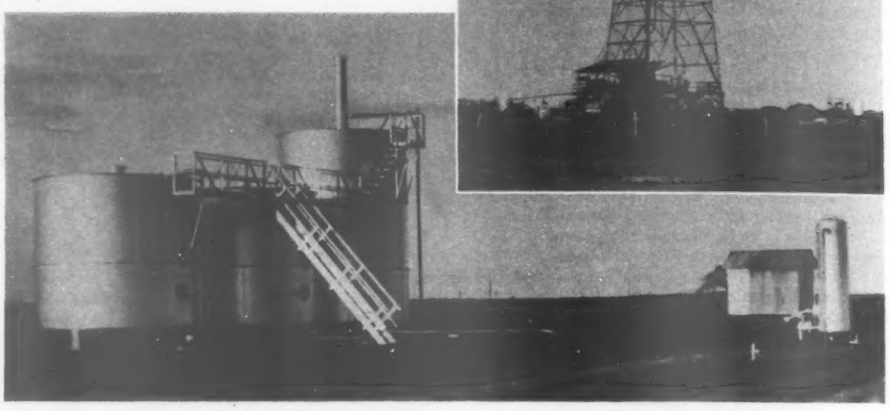
With high regards and good wishes, I am

Sincerely yours,

ROBERT H. JACKSON,
Attorney General.

Lolita Field One of Texas' Most Active

By NEIL WILLIAMS



Inset shows drilling well in Lolita field, Jackson County, Texas Gulf Coast. Below it is the field stock tank and separator installation on Wellington Oil Co.'s discovery lease

LESS than 4 months old, the Lolita field, Jackson County, has become one of the most active spots on the Texas Gulf Coast. With nine drilling rigs running, it is second to the West Ranch field, also in Jackson County, 10 miles distant, where there are 14 operations. More rigs are being brought into Lolita with the spread of development bringing additional operators into the play.

Reflecting this activity, 17 producing wells were completed in the field up to September 7. Cutting of drilling time due to increased familiarity with formations and drilling conditions, and the mounting number of rigs operating are now materially boosting the completion rate. So far no failures have been recorded within the known producing limits of the field.

These known productive limits already cover an area extending more than 1¾ miles in length from east to west, and over ½ mile from north to south. As yet these limits have not been definitely defined in any direction. Extension tests are now drilling around various sides.

The active development in these fields is establishing Jackson County, until the last several years a "no man's land" between the upper and lower Gulf Coast areas, as an important oil reserve.

Although Lolita so far has not shown signs of approaching the West Ranch field in size or productivity, or in consistency of sands and structure, it is expected to prove above the average run of discoveries, with prospects that it may turn out to be the most important field opened this year. So far, however, development is not sufficiently advanced to reveal much conclusive evidence as to the nature or extent of the field.

Active development, which may lead to early proving up of the field, is inspired by a diversified, checkerboarded lease ownership, some of which is in comparatively small tracts, forcing competitive offset drilling. Development to date has brought eight companies and independents actively into the play. Another half dozen companies or individual operators have adjacent leases.

Tabulation of Completions and Drilling

Operators already active in the field are listed in the following tabulation of wells completed and drilling within the immediate area:

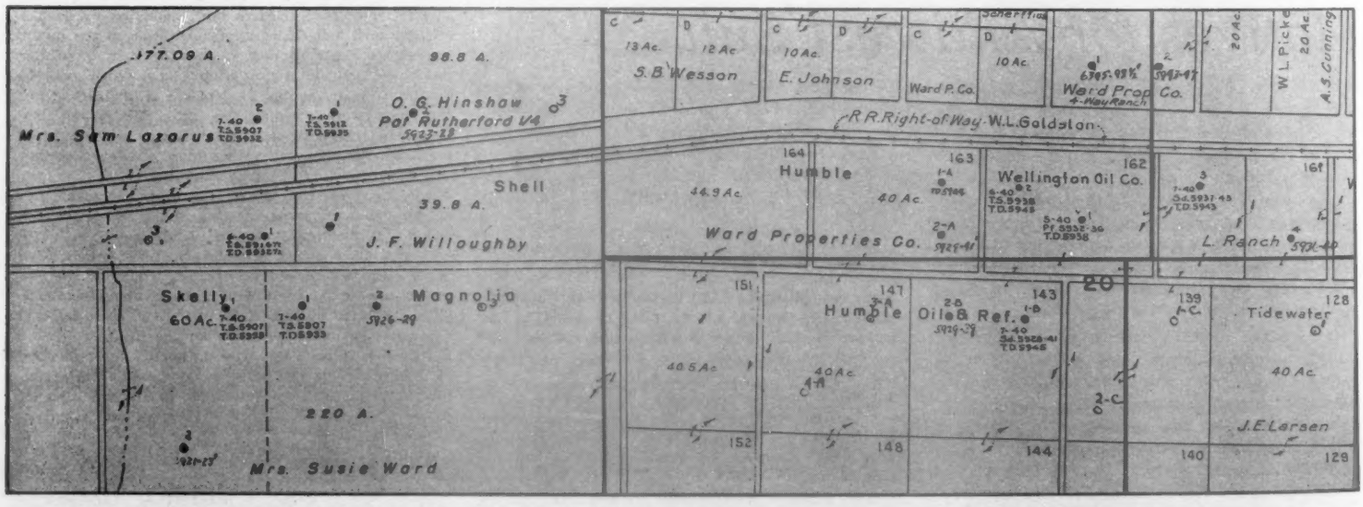
Company—	No. producing wells	Rigs running
Barnsdall Oil Co.	2	1
Humble Oil & Refining Co.	4	1
Magnolia Petroleum Co.	5	2
Shell Oil Co.	0	1
Skelly Oil Co.	2	1
Shield & Rutherford	0	1
Tide Water Associated Oil Co.	0	1
Wellington Oil Co.	4	1
Total	17	9

In addition to the above active operations, C. G. Glasscock has started a test for the Lolita pay about a mile south of the west end of the field. Other companies and individuals with close-in acreage include W. L. Goldston, who holds the lease to the St. L. B. & M. (Missouri Pacific) right-of-way which extends through the middle of the field lengthwise; Arkansas Fuel Oil Co.; British American Oil Co.; and W. L. Pickens.

The field at present consists of two productive areas, one centering around the discovery well drilled by Wellington Oil Co., and the other around the second producer located about 1¼ miles west of the discovery well and drilled by Barnsdall Oil Co. The latter, which was drilling before completion of the discovery well, was brought in within a few weeks after the first well.

Steady development of the two areas is nar-

(Continued on Page 23)



Map of Lolita field, Jackson County, Texas Gulf Coast, showing development around discovery well and west-extension area

Japan's Axis Alliance Seen As Threat to East Indian Oil

By J. P. O'DONNELL

NEW YORK, Sept. 30.—The announcement that Japan had joined the Axis in an "economic, political and military" pact again focuses attention on the Netherlands East Indies with their oil fields and refineries which would constitute an invaluable asset to any belligerent power. Concern over the future of this area was first felt in mid-July when Japan announced plans for a new order in East Asia that embraced the Netherlands East Indies, French Indo-China, Burma, and Thailand in its scope. That concern was eased when negotiations were begun between the Batavian and Japanese governments but now it is not only revived but greatly aggravated by the new status of Japan.

The question now is: What action will Japan take as a partner of Germany and Italy? If the Netherlands are regarded by the Axis as a hostile power, even though the mother country has already been subjugated, Dutch colonies would then be regarded as hostile also. This interpretation could be taken as giving Japan sufficient justification for striking at the enemies of her new associates and those enemies would include the Dutch East Indies.

When Japan first announced her plans for a new East Asia, the Netherlands East Indies made preparations first to defend themselves and second, if that defense proved inadequate, to render their oil-producing and refining facilities inoperative. In preparing for defense the Batavian Government by September 1, 1940, had assembled a fleet of more than 400 fighting planes, mostly American built, and another 370 American planes were on order. Flying bases had either been established or were under construction at many points throughout the islands, stretching from Great Britain's base at Singapore to her newly developed air and sea base at Darwin in northernmost Australia. In preparations to destroy if unable to defend, the Dutch East Indian Government is reported to have mined pipe lines, refineries and even individual wells so that they could be destroyed on an instant's notice.

May Try Appeasement

As an alternative to war, the Batavian Government may resort to a policy of appeasement by which it would supply Japan with petroleum products she requests. Japan's needs are believed to have become acute since United States banned exports of aviation gasoline to her and her nearest alternative source of supply is the Dutch East Indies where she could obtain crude for processing at home or refined products from the eight refineries on the islands of Sumatra, Borneo, and Java which have a combined capacity of 180,000 bbl. per day in addition to 28,500 bbl. of cracking capacity. The crude oil could be processed in Japan's 17 refineries, which have a combined capacity of 52,600 bbl. and a cracking capacity of 16,250 bbl. Since the report from which these data were taken was issued, Japan is believed to have improved her refining facilities both from the standpoint of capacity and the quality of the products.

The appeasement policy may find some foundation in the trade negotiations which were inaugurated between the Japanese and Batavian governments in early September. Japan was represented at the conference by Tadaharu Mukai, chairman of the prominent Japanese firm of Mitsui & Co., which was reported ready to finance a trans-Mexico pipe line, and by Ichizo Kobayashi, Japan's minister of commerce. Also reported attending the conference were Fred Kaye, of New York, representing the Standard-Vacuum Oil Co., and J. C. van Eck, of London, representing the Shell interests.

Principal Operating Companies

The principal companies operating in the Netherlands East Indies and the locale of their operations follow:

Nederlandsche Koloniale Petroleum Maatschappij or Standard-Vacuum Oil Co., which operates in Sumatra, Borneo and Java; Nederlandsche-Indische Aardolie Maatschappij, a joint organization of the government and Royal Duch-Shell, which operates in Java and Borneo; Nederlandsche Pacific Petroleum Maatschappij, Standard Oil Co. of California and the Texas Co., whioh operates in western Java; Nederlandsche Nieuw Guinee Petroleum Maatschappij, Royal Dutch-Shell, Standard-Vacuum, California Standard and Texas Co. combination, which was granted a large concession in northwestern New Guinea, and Bataafsche Petroleum Maatschappij, Royal Dutch-Shell, which operates in Sumatra, Borneo, Java, and Ceram.

Because of the international character of the operating companies, the situation in East Asia may develop a parallel to the situation in Rumania. An appeasement policy on the part of the East Indian Government would in a measure duplicate developments in Rumania when that country yielded to Axis persuasion.

Rumania established an oil commissar with broad powers over the industry, forbade the disposition of oil companies' stock to maintain their status quo and expelled many of the officials of British and French companies. Whether such action will be taken in the East Indies may depend to a large extent on the amount of pressure Japan can bring to bear on the Batavian Government.

It is not unlikely that the foresighted East Indian Government has more or less determined already what moves it will make for it expressed fear of this eventuality when the United States embargo on shipments of aviation gasoline to Japan went into effect. It recognized the fact that Japan would have to resort to another source of supply and that the East Indies represented the most desirable alternative. It also recognized the fact that the colonists are loyal to their queen, a refugee in England, and that since their currency is linked to sterling, the East Indies are bound to the sterling bloc and must of necessity buy as much as possible from other members. Dollar resources, as in scattered divisions of the United Kingdom, are conserved for the purchase of war materials. This is essential for United States' law prohibits the sale of such material to belligerents except for cash and the credit of the Indies, however good, is valueless in this respect.

If Japan's expansionist policy or her need for the East Indies' oil is great enough to induce her to threaten invasion of the islands, the problem of the Batavian Government will be to decide between the possibly sufficient appeasement policy or strict maintenance of loyalty to a conquered mother country and her dependence on the sterling bloc. If she resists Japan's possible threat of invasion, the question will be whether she will be able to defend herself and, if not, will the already planned destruction of oil facilities eventuate.

(Continued on Page 23)

Part of the Ochiuri field, Dambovitsa district, Rumania

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Come Out of the Trenches

The antitrust proceedings filed Monday by the Department of Justice against 22 oil companies, their subsidiaries and affiliated companies, and the American Petroleum Institute are more than just another suit against a large segment of the oil industry.

They are, in effect, a charge against the American system of free enterprise which, if sustained by the courts, must shortly involve all industry, large and small.

With the exception of two or three conditions peculiar to the oil industry, the operating practices complained about could be made against all major industries. They are an essential part of this country's industrial development and account for its phenomenal growth.

With this background the suit cannot help but be interpreted as another indication that this administration is not in sympathy with the American way of doing things. This action and the many that have preceded it add up to some form of centralized control which will place all industry at the beck and call of Washington.

The apology given the Advisory Commission of the Council of National Defense for filing the suit after the commission had made clear that it did not favor the action is indicative of the absurdity of the entire proceedings.

The Justice Department explains that in view of the commission's fear that any interference with pipeline transportation and marketing might impede the oil industry's ability to serve the military, it will not ask divorcement of these operations at this time.

Thus the Government's prosecutors will not seek to remove a leg or an arm but will confine their efforts to delivering annihilating body blows and in this manner assure that the oil industry will be able to better serve the country in the present emergency.

The suit springs entirely from the administrative branch of the Government. Aside from a few legislative hecklers whose occasional outbursts reveal nothing except an astounding ignorance of the operating methods of this industry in relation to the every-day living of their constituents, there has been no demand for any action such as the Department of Justice now has under way.

Congressional committees in recent months have completed exhaustive investigations of every phase of the industry's operations. No adverse reports have come from them.

They did not find perfection and none was claimed. They did find an industry standing on its own feet, correlating its operations from the geological crew to the service station, a leader in technological accomplishments, considerate of employes, and a business which has sold itself to its customers on the sound basis of better products at lower prices.

As to the specific charges contained in the latest suit, they have been answered so often their repetition has long since become tiresome. Somewhat vaguely the suit indicates that competition has come to an untimely end in the oil industry.

There should be a laugh here for the sales managers of more than 300 refining organizations—including the 22 companies—who daily compete in the sales of products from 450 plants, operating 24 hours daily throughout the year. They will be joined by some 20,000 independent jobbers and a quarter million independent operators of filling stations.

Farther back in the industry are those who solicit crude connections for their pipe lines and land men who vie with each other in the purchase of likely leases for development by their employers.

All these vanguards know there is competition in the oil industry involving the purchase of properties,

every movement of crude oil and every sale of finished products from the refinery gate to the consumer's tank.

The fact that buyers pay the same prices for crude oil, and refiners and station owners often sell their products on the same contract or open-market basis, is viewed with suspicion.

Why shouldn't crude oil and finished products of the same general specifications, located in the same area, sell at the same prices? How else could they be sold? If there is something wrong with this, then the Government should do something about the practice which is accepted as basic in all industries in the buying and selling of raw materials and finished products.

In regard to price, a statement of the Department of Justice as to what it hopes to accomplish in this suit leaves a question as to the knowledge or good faith of those who will prosecute it before the courts. The statement said:

> "With competition restored to the oil industry, gasoline, fuel oils, kerosene and lubricants should be sold at lower prices to the consumer who should then receive the benefits of technological improvements and the opportunity to purchase a variety of products."

The Department of Labor has a monthly answer to this statement. The latest report shows the wholesale-price index for all commodities in relation to 1926 is 77.5, an increase of 2.5 over the same period in 1939. In contrast, the latest petroleum index is 50, a decline of 4.8 compared to a year ago. Petroleum continues in the lowest-priced position of any major commodity and obviously is entitled to higher, not lower, prices at this time.

Because the American Petroleum Institute collects statistical information and makes it available to the industry and because members of its staff from time to time have analyzed conditions in regard to demand, it is made a party to the suit and its dissolution is sought. The Institute's activities follow general association practice and its reports have been approved and used at Washington for years.

This discussion of the detailed charges could be carried on endlessly but little that is new would be uncovered. There is nothing to fear in any complete presentation of this case.

In the wording of the suit there are numerous gestures to the independent elements in the industry. In a statement relative to the objectives of this suit it was explained: "If the department succeeds in this action, independent producers should receive higher prices for their crude oil and independent refiners should be able to compete with the major oil companies."

How preposterous this is, is readily apparent in any analysis of today's market conditions.

Protection for the little fellow is always the bait offered by governments in circumscribing the operations of any industry. The record is clear in this and other countries that governmental control means the end of the small operator.

If the present generation of independents follows the lure now being offered they have forgotten the lesson learned by their sturdy forefathers of battling their larger competitors in the accepted manner but at all times being wary of governmental Greeks bearing gifts.

The danger in the present suit lies not in the charges but in the additional evidence of the unfriendly attitude of Government toward business.

In California, starting this week, operators are presenting the only final answer to this constant persecution. They have inaugurated a program which, through 900 West Coast newspapers and other publicity media, will explain what the oil industry means to that part of the country and the major part the industry is playing in the defense program. The operators' chairman covered the entire situation when he said:

"The petroleum industry's greatest crime has been industrial modesty. Blushingly whispering compliments to itself, it has kept the public in ignorance of its activities, aims, and accomplishments. The chief difficulty with our public relations is misconception, caused by lack of knowledge."

Our governmental proponents of totalitarianism in industrial control have made progress because the other side has never been adequately presented. It is not sufficient to answer charges at hearings and in the courtroom. The appeal now must be to public opinion.

This industry and all industry must come out of the trenches. The enemy and the onlookers, who will be the final judge of this contest, have no respect for the foe who is constantly beating a retreat or hiding.

The time has arrived to stop trying to dodge bullets and to start a well-directed offensive which will end the necessity of a constant defense for this industry.

STATE CAPITALS...

MICHIGAN

AN AUCTION OF OIL AND GAS RIGHTS on 37,000 state-owned acres is scheduled for October 4 by the Lands Division of the Michigan Conservation Department. Recent price advances and discoveries in northern Michigan areas were expected to increase the demand. The acreage offered is located in Antrim, Arenac, Clare, Gladwin, Kalkaska, Mason, Midland, Missaukee, Oceana, and Roscommon counties.

TEXAS

INCREASES TO MEET MARKET DEMAND were criticized and defended at special field hearings held by the Railroad Commission in Austin on Monday. Complaints against the Rincon and Rogers & Rogers fields, which have allowables of 150 bbl. per well daily, pointed out the two fields were examples of inequities in the commission's allocation of production. This prompted the commission to order operators to show cause why the quotas should not be reduced.

Sen. Clint Small, counsel for the Independent Oil Operators Equity Association, who contended the fields should be cut back to levels of comparable pools, lodged the complaint in unsuccessfully petitioning for a state proration hearing. Instead, the two special hearings were docketed. Commissioners Ernest O. Thompson and Jerry Sadler conducted the hearings, but did not immediately announce their decision. To reduce the fields, without a showing of a reduction in demand, would constitute a reversal of the current policy.

Defending the 150-bbl.-per-well quota for the Rogers & Rogers field in Montague County, W. G. Rogers of Nocona told the commission all the production was being sold to Sinclair Prairie at the market price of $1.03, that there was a demand for 1,500 bbl. daily more, and that no waste was being created by the present rate of flow. Sinclair Prairie Crude Oil Purchasing Co. notified the commission by letter it desired to continue purchasing the allowable, while Mr. Rogers displayed offers of La Salle Petroleum Co. of Burkburnett and Tydal Refining Co. of Gainesville to purchase 1,000 and 500 bbl., respectively.

Witnesses for W. R. Davis, Inc., sole leaseholder in the rapidly growing Rincon field in Starr County, gave testimony to show the 150 bbl. per well can be produced without physical waste and there is a demand for the entire output.

TEXAS' ALLOWABLE PRODUCTION last week rose 7,350 bbl. to 1,376,793 bbl. on September 28 the Railroad Commission reported, this increase being due largely to the commission's liberal policy of granting increases to meet market demand. This total allowable represented an excess of 56,493 bbl. over the September Bureau of Mines market-demand figure and 71,593 bbl. over the October figure. Underproduction of allowables, estimated at 2½ per cent, however, is expected to lower this overage to about 37,173 bbl. The state's basic allowable gained 6,188 bbl. to 1,676,627 bbl., which was reduced to 1,173,639 bbl. by the shutdowns, while production exempt from the holidays rose 3,018 bbl. to 203,154 bbl. daily average.

Every proration district except East Texas shared in the increase. The daily average allowable of the various districts and the change from a week ago is as follows: Southwest Texas 233,561 bbl., up 1,467 bbl.; Gulf Coast 207,694, up 533 bbl.; East Central Texas 79,186 bbl., up 330; East Texas 367,938 bbl., unchanged; West Central 54,205, up 2,078 bbl.; West Texas 217,430, up 1,766 bbl.; North Texas 130,741, up 1,108 bbl.; Panhandle 86,044, up 68 bbl.

CALIFORNIA

THE CALIFORNIA CONSERVATION COMMITTEE is facing a very difficult task in its attempt to secure effective compliance with curtailment and it is not at all certain that the present move will meet with success. As a matter of fact crude-oil production during August was 4,327 bbl. per day in excess of production during the month of July and crude-oil production during the first 3 weeks of September has been averaging 624,691 bbl. daily. The allowable for the month of September is 571,000 bbl. per day so that in the first 3 weeks of the month crude-oil production has been 53,691 bbl. per day in excess of the specified allowable. This excess will be reduced somewhat by decreased production during the final week or 10 days in the month but there is no possibility of showing any improvement.

Operators in certain fields have been given to understand that they must curtail and make an additional curtailment between now and the close of October. A check indicates that a number of operators are of the opinion that a total embargo is but a matter of a short time and for that reason have increased production to convert as much crude oil to money as possible before this happens. Stability of the present curtailment program is being seriously jeopardized by refusal of a number of operators to curtail.

COLONELCY OR COMMISSIONER?

Texas Railroad Commissioner Ernest O. Thompson before December will apparently have to decide whether to continue on the Railroad Commission or vacate that office for his colonelcy in the Texas National Guard. He was placed in this position last week when Atty. Gen. Gerald C. Mann in an opinion ruled that National Guard officers called into federal service must vacate their state offices—the state office he ruled, becomes vacant when the officer "accepts an office of profit or trust in the active military service of the United States." Thus if he retains his commission in the National Guard his position on the Railroad Commission becomes vacant. In which event, many Texans are wondering if J. C. Hunter of Abilene, recently appointed by Governor O'Daniel as Texas representative on the Interstate Oil Compact Commission, would not be in line for appointment to the vacated office

OKLAHOMA

THE STATE CORPORATION COMMISSION on Monday set Oklahoma's allowable production for October at 390,000 bbl., the same as in August and September, as was recommended by W. J. Armstrong, chief conservation officer. Little change from the September order was shown in the new order. Percentages were reduced 5 per cent in most of the prorated fields, while minimums were reduced slightly in several.

Largest cut was in the Oklahoma City Wilcox zone, where the marginal was cut from 165 to 155 bbl. daily, and the flow cut from 80 to 70 per cent; total quota for the zone was left unchanged at 79,884 bbl. The total for Class B fields was set at 99,033 bbl. daily, Class C at 15,763 bbl., Class D fields were given 694 bbl. allowable, Class E fields a total of 50,475 bbl. and unprorated fields were given 144,151 bbl.

In announcing the new order Mr. Armstrong stated: "The new percentages should bring the October production well under the Bureau of Mines estimates for demand of 403,500 bbl. daily. A few adjustments, however, could be made in the Greater Seminole group of fields because of water intrusion. We did not disturb the situation in the fields that are operating under a repressuring program."

KANSAS

KANSAS' OCTOBER ALLOWABLE schedule is expected to be issued by the Corporation Commission this week following the market-demand hearing at El Dorado, Kans., last Friday. In view of testimony presented at the hearing, the state's total figure for this month is expected to be about the same as that of September. The Bureau of Mines estimated market-demand figure for Kansas oil during October was placed at 178,700 bbl. daily, compared with 170,700 in September. The commission set an allowable of 190,000 bbl. during the past month, with actual production in the neighborhood of 198,000 bbl. daily.

At the hearing Theo A. Morgan, director of conservation, testified that the estimated consumptive demand from Kansas would be between 185,000 and 191,000 bbl. a day. He testified further that purchasers had submitted nominations for 182,449 bbl. a day, compared with September nominations of 188,568 bbl. a day, and indicating that one or two companies now running crude into storage would like to curtail their purchases.

Mr. Morgan likewise told the commission "the crude-oil storage situation in Kansas has shown a healthy decline. Oil of Kansas origin in storage has declined 646,000 bbl. as of September 14 from a peak of 8,476,000 bbl. on April 6." He added that a decline of approximately 51,000 bbl. daily in Illinois production the past 3 months had "a materially marked effect on the demand for Kansas oil."

LOUISIANA

B. A. HARDEY, commissioner of the Louisiana Department of Conservation, has announced that barge shipments of oil leaving Louisiana will be subjected to the same rigid registration covering pipe-line movements in the future. Beginning October 1, all such movements and in addition intrastate movements by water must be registered.

Department of Justice Explains Basis For Pipe-Line Suits

WASHINGTON, D. C., Oct. 1.—The predicates upon which the Department of Justice is apparently seeking a premise for divorcement of crude oil and gasoline pipe lines go back to the basic provisions of the Interstate Commerce Act. A premise for future dealings with pipe-line ownership is sought in the three separate suits filed in Delaware against Phillips Petroleum Co. and Phillips Pipe Line Co. and in Indiana against Standard Oil Co. (Indiana). The Elkins Act is the statute through which pipe-line ownership by the three companies is to be attacked.

Not all lawyers in the government service agree that the Elkins Act can be used to stop the payment of dividends by pipe lines to their major-company owners. Many experts in the Interstate Commerce Commission, for example, take the position that such dividends cannot be held to be transportation rebates under any legal, economic or social construction of the Elkins Act, and have said as much to the anti-trust officials.

In the current issue of the Cornell Law Quarterly is an article on pipe-line divorcement by Forrest R. Black, Ph.D., an attorney on the research staff of the antitrust division. Mr. Black has assisted in various oil investigations of the division and last year was assigned as special counsel to the Senate subcommittee holding hearings on the Borah-Gillette divorcement bill. The views expressed in his article are, of course, his own and do not necessarily reflect the prevailing opinion in the department, but it is a fair assumption that the legal precedents and cases cited by Mr. Black will be used.

Section 2 of the Interstate Commerce Act makes it unlawful for any common carrier to give a shipper any sort of rebate, and the Elkins Act makes it unlawful for any person to offer, grant, or give, or to solicit, accept, or receive any rebate, concession, or discrimination in respect to the transportation of any property by any common carrier whereby the property shall by any device whatever be transported at a less rate than that named in the tariffs, or whereby any other advantage is given or discrimination practiced.

Devices, Mr. Black argues, although legal per se, are outlawed when they constitute integral parts of a plan that violates the statute, even though there is no express statutory prohibition against the particular arrangement used, continuing:

"So the legality of the following ingenious devices, considered separately, is unquestioned: (a) stock ownership of the pipe-line company by the major oil-producing companies, (b) with its alleged insulation of liability by virtue of the creation of a separate corporate entity and (c) the right of the directors of the pipe-line company to declare dividends out of profits. But when the devices of stock ownership, corporate entity and the 'kick back' in the form of dividends are parts of a plan whereby the owner of the pipe lines is permitted to ship at cost, while all others must pay the published transportation rate, then we have a continuing violation of the 'rebate device' sections of the Elkins Act which is inherent in the very nature of the pipe-line set-up."

Oil pipe lines were made common carriers by the Hepburn Act of 1906, but this same statute exempted pipe lines from the "commodities clause" of that law which forbids railroads from owning commodities transported by them. But Mr. Black advances the novel thesis that basic provisions of the Interstate Commerce Act, enacted prior to the Hepburn Act, prohibit pipe-line companies from carrying their own oil. He bases this contention on a case decided by the Supreme Court against the New Haven Railroad in 1906, several months prior to enactment of the Hepburn Act. In this case the railroad bought coal at one end of its line and sold it at the other end at a price less than the cost of the coal to it plus its published tariff rate. The company contended that it absorbed the loss in its capacity as dealer rather than as carrier, but the court held that this was simply a device to evade the prohibition on rebates. From this Mr. Black argues that pipe lines are subject to the antirebate provisions of the Interstate Commerce Act even though exempt from the "commodities clause," and that the New Haven case is sufficient ground for bringing a suit to stop pipe lines from carrying their own oil or from giving rebates in the form of dividends to shippers.

Skilled Oil Workers May Be Deferred From Draft

WASHINGTON, D. C., Sept. 30.—Skilled workers in the petroleum industry whose work is essential will probably be deferred from the draft until and if they can be replaced by others, even though their jobs may not be necessary to national defense, selective-service board officials last week indicated.

They explained that there will be absolutely no deferments by occupation, except for federal and local officials and men already in the armed forces. As the conscription law was written, no one except officials and soldiers will be permanently exempt from the draft. Three classes were listed as deferred, or those whose call has been temporarily postponed: men in essential industries, men with dependents, and men with physical disabilities.

Draft officials declared that, subject to approval by a selective-service director not yet appointed, the first deferred group contains two sections: men necessary to the peacetime economy of the nation who are not connected with national defense, and those who are connected with national defense.

It was emphasized that no man will be deferred by occupation; deferment will be only on an individual basis. Here is how it will work.

Thousands of local draft boards will have power to grant deferments. To decide if a man is necessary, they will ask the employer for his opinion, but they need not follow his advice. The local board will defer a skilled worker if he cannot be replaced immediately, and in cases where if he were called, other men would be deprived of work. The deferment lasts only for 6 months, after which the local board will discuss the question again, and if the situation is the same the worker will be deferred for another 6 months. But if another man has been found to take his place, or if his job has been changed, he will be put on the active list, subject to immediate call. A man must report any change of status to the board within 5 days.

If any industry does not attempt to get replacements for its skilled workers, local boards may refuse to defer the employe any longer. Unemployed men may be deferred if they prove they will soon receive a necessary job.

It was admitted that a local board in one section of the country may decide a man in a certain occupation is essential, whereas in another part of the nation a man in a similar occupation may be drafted. All the central draft board can do in a case of that kind is to recommend to local boards that deferments be on a uniform basis.

Decision of local boards is subject to review, and government appeals agents will carry appeals to an appropriate court. But for all practical purposes the stand of the local board will be final.

The law includes a provision that the employer should return the employe's job after the year's service. But there are no legal penalties provided, since it is felt that public opinion will be the only necessary compulsion.

"Draft Industry" Law Does Not Give President Power to Appoint Administrator

WASHINGTON, D. C., Sept. 30.—The "draft industry" provision of the conscription law, as it was finally passed by Congress after much wrangling and heated discussion, provides that the Government may take over on a rental basis any manufacturing facility which refuses to fill orders necessary to the national defense.

The clause in no way gives the president the power to appoint an administrator over an entire industry, even if that industry refuses to cooperate. The Government is authorized to deal with plants only on an individual basis. Of course, it is possible that the president may claim he can appoint, for example, an administrator for the oil industry, but the bill as drawn up contains no such power.

Section 9 of the law empowers the president through the heads of the War and Navy departments, to place orders with any company for any product usually manufactured by that company. Compliance with such orders is to be obligatory and shall take precedence over all other orders previously placed. In cases where the secretary of War or the Navy decides that a plant is capable of making a product ordered by the Government and refuses to take such orders or to give preference to them at prices determined by the Army and Navy, the heads of the War and Navy departments are authorized to take immediate possession of the plant and to manufacture the product through the appropriate branch of the Army or Navy. Punishment of 3 years' imprisonment and a $50,000 fine is provided. The clause states that compensation for seizing a plant shall be "fair and just," but contains no details as to how the compensation shall be determined.

I.P.A.A. Votes Support for Interstate Oil Compact

FORT WORTH, Tex., Oct. 1.—Support and encouragement for the enlarged activities of the Interstate Oil Compact Commission was voted here September 28 by the special Committee of 29 of the Independent Petroleum Association of America. The I.P.A.A. committee also will adopt the same course as to state regulatory bodies. Specific recommendations of the committee will not be disclosed until the annual convention of the association at Dallas, Tex., October 16 to 18.

Pan American Buying Crude in Hastings and South Houston

HOUSTON, Tex.—Effective October 1 Pan American Pipe Line Co. started purchasing crude in the Hastings and South Houston fields of Gulf Coast Texas and will post prices in line with those being paid by other purchasers. The Stanolind Oil Purchasing Co. has heretofore purchased crude in these fields for delivery to the Pan American refinery at Texas City. Pan American Pipe Line Co. owns, and will operate, the gathering systems and the trunk pipe line serving these fields and the Gillock field in Galveston County, Texas.

Standard of Louisiana Enters Schuler Field as Buyer

SHREVEPORT, La., Oct. 1.—Standard Oil Co. of Louisiana entered the Schuler, Arkansas, field as an active crude purchaser September 27. The company will buy about 4,000 bbl. daily in that field. A gravity schedule ranging from 55 cents per barrel for crude below 31° with a 2-cent differential up to 95 cents for 40° and above, was posted.

Excess-Profits Tax Will Have Minimum Impact on Industry

By F. J. SANSONE
Carl H. Pforzheimer & Co.

THE petroleum industry's earnings as a whole can increase materially over the levels of 1938 and 1939 before feeling the impact of excess-profits taxes as now proposed. This results from the fact that the rate of return earned by the industry on its large invested capital is moderate and that the period 1936-39, which is to be used as a base in computing such taxes, was reasonably prosperous for the oil business and included one of the industry's most profitable years.

Following passage of excess-profits tax bills by the House of Representatives on August 29, and the Senate on September 19, the measure went to a conference committee where efforts are being made to reach an agreement on major differences in the bills as approved by the respective branches of Congress.

The House bill gives corporations the option of calculating their excess-profits tax exemption, or credit, either on the basis of its average earnings for the years 1936 to 1939, inclusive, or on the basis of average return on invested capital in these years. Separate tax schedules are provided for each method. Corporations using the average-earnings method will pay at higher rates than those basing their excess-profit credit on rate of return on invested capital.

The schedule of tax rates under the House bill is as follows:

Amount of excess profits:	Rates of tax (%) Average-earnings method	Rates of tax (%) Invested-capital method
First $20,000	25	20
Next 30,000	30	25
Next 50,000	35	30
Next 150,000	40	35
Next 250,000	45	40
Over 500,000	50	45

In addition to paying the excess-profits tax at higher rates, those companies which elect to follow the average-earnings method in determining their excess-profits credit would be required to pay a 4.1 per cent excess-profits tax on all income, or in effect increasing the normal income tax for corporations electing this method from the present maximum of 20.9 per cent to 25 per cent. Under the average-earnings option, income subject to the excess-profits tax is the amount by which earnings in any year exceed the average of the 4 years 1936-39, such excess to be reduced by a specific exemption of $5,000.

Specific Exemption in Second Option

Under the second or invested-capital option, the excess-profits credit is an amount equal to the percentage which net income in each of the years in the base period bears to the invested capital for each of those years, but not in excess of 10 per cent or less than 5 per cent—except that with respect to the first $500,000 of invested capital in the taxable year the minimum is 7 per cent instead of 5 per cent. As under the first option, a specific exemption of $5,000 is also allowed. If the percentage of the base-period earnings to the base-period invested capital lies between the extremes indicated, the corporation is allowed an exemption equal to such percentage of its capital for the taxable year.

Thus, the invested-capital alternative affords some measure of protection to industries of the "prince or pauper" variety and corporations that have earned little on invested capital or which have materially increased capital since the beginning of the base period. Corporations that earned more than 10 per cent would naturally use the first alternative, except where the increase in the exemption by the use of the average-earnings method was not sufficient to absorb the larger normal and excess-profits tax payable thereunder. In general, it appears that corporations with average earnings of as much as 15 per cent on invested capital would find it to their advantage to follow the invested-capital method and corporations with earnings in excess of 15 per cent would find the average-earnings alternative more advantageous.

The Senate bill differs from the House bill in the following respects:

The "penalty" tax of 4.1 per cent on the normal-tax net income of corporations electing to use the average-earnings method of computing excess-profits credit was eliminated in the Senate measure which substituted for this provision a general increase of 3.1 per cent in the normal tax payable by all corporations regardless of their liability for excess-profits tax.

How Bill Limits Taxes

The Senate bill limits excess-profits taxes to earnings in excess of the average for the 1936-39 base-period years. For those corporations electing to compute their tax on the basis of invested capital, a flat credit of 8 per cent of the invested capital for the taxable year is allowed, whereas under the House bill the average rate of return during the base period up to a maximum of 10 per cent was allowed as the credit under this alternative.

The 5 per cent differential in the graduated excess-profits tax rate schedule of the House bill which favored corporations electing the invested-capital alternative of computing excess-profits credit was removed, the Senate bill substituting a single schedule which is the higher of the two provided in the House bill (25 to 50 per cent).

A flat exemption of $10,000 is provided for all corporations in lieu of the House provision allowing an exemption of $5,000.

The Senate measure permits filing of consolidated returns under rules and regulations to be issued by the commissioner, whereas the House bill made no provision for such returns.

Since the oil industry's indicated return on invested capital as defined in the House bill, based on reports to stockholders, averaged approximately 6.8 per cent during the base period or well within the limits of the minimum and maximum allowances, its excess-profits exemption thereunder would approximate the average earnings for

TABLE 1—AGGREGATE EARNINGS OF 32 OIL COMPANIES, 1928-39

Year—	Net income
1939	$356,154,046
1938	341,083,662
1937	629,144,287
1936	458,820,512
1935	287,719,407
1934	182,341,148
1933	102,967,964
1932	82,144,076
1931	*73,445,526
1930	335,979,116
1929	638,158,233
1928	551,971,354
Total	$3,893,038,279
Average 1928-39	324,419,856
Average 1936-39	446,300,627

*Deficit.

TABLE 2—COMPARISON OF INVESTED CAPITAL AND BASE PERIOD AND 1939 EARNINGS OF LEADING OIL COMPANIES

	*Invested capital	8 per cent of invested capital	Average annual earnings, 1936-39	Net earnings reported for 1939
Amerada Corp.	$18,158,000	$1,452,640	$1,812,295	$1,230,764
Atlantic Refining	172,415,000	13,793,200	6,652,795	5,023,282
Barnsdall Oil Co.	20,082,000	1,606,560	2,180,940	1,720,292
Consolidated Oil Co.	289,926,000	23,194,080	13,204,204	7,540,881
Continental Oil Co.	105,442,000	8,435,360	8,751,329	6,304,504
Gulf Oil Corp.	364,391,000	29,151,280	21,635,731	15,315,781
Houston Oil Co.	48,505,000	3,880,400	1,097,509	1,010,531
Humble Oil & Refining Co.	328,771,000	26,301,680	36,714,542	29,950,288
Lion Oil Refining Co.	11,894,000	951,520	776,226	652,352
Mid-Continent Petroleum Corp.	60,574,000	4,845,920	3,444,187	2,650,502
Ohio Oil Co.	118,369,000	9,469,520	6,454,682	1,492,086
Pacific Western Oil Co.	18,454,000	1,466,320	1,250,526	813,690
Phillips Petroleum Co.	187,875,000	15,030,000	15,217,949	9,833,314
Plymouth Oil Co.	10,645,000	851,600	2,439,792	2,475,052
Pure Oil Co.	164,373,000	13,149,840	8,191,374	8,290,418
Seaboard Oil Co.	8,475,000	678,000	2,143,765	1,746,464
Shell Union Oil Co.	328,346,000	26,267,680	15,861,968	11,805,713
Skelly Oil Co.	51,312,000	4,104,960	4,087,375	2,360,783
Socony-Vacuum	772,350,000	61,788,080	43,569,314	34,452,710
South Penn Oil Co.	43,289,000	3,463,120	3,127,983	2,837,042
Standard Oil Co. of California	575,405,000	46,032,400	27,830,790	17,882,505
Standard Oil Co. of Indiana	663,873,000	53,109,840	41,187,223	34,142,643
Standard Oil Co. of Kentucky	35,438,000	2,835,040	3,933,905	3,979,562
Standard Oil Co. (New Jersey)	1,369,912,000	109,592,960	102,737,414	89,128,756
Standard Oil Co. of Ohio	57,375,000	4,590,000	3,781,095	5,602,499
Sun Oil Co.	115,226,000	9,218,080	6,788,109	6,959,677
Texas Corp.	523,200,000	41,856,000	37,215,124	32,886,807
Texas Pacific Coal & Oil Co.	11,257,000	900,560	887,618	889,238
Tide Water Associated Oil Co.	165,092,000	13,207,360	11,351,389	8,958,971
Union Oil Co. of California	158,016,000	12,641,280	7,725,932	5,846,241

*Represents common stock, preferred stock, earned and paid-in surplus and 50 per cent of debt as reported in annual reports of the various companies.

Note: Figures are those contained in annual reports to stockholders. Those submitted to the Government for tax purposes are often computed on a different basis.

the years 1936-39. Those years were among the most profitable in the oil industry's history, as may be seen in the accompanying Table 1. The 32 companies included in this compilation had combined average annual earnings for the 4 years 1936-39 of $446,300,627, as compared with actually reported earnings of $356,154,046 in 1939. Thus, earnings of these companies as a group could increase about 25 per cent over those of 1939 before becoming subject to excess-profits taxes under the House bill.

The Senate bill's flat exemption of an 8 per cent return on invested capital would materially increase the excess-profits credit of most oil companies as compared with that allowed in the House bill, thereby permitting a larger increase in earnings before becoming subject to excess-profits taxes. However, the increase of 3.1 per cent in the normal corporate-income tax rate provided for in the Senate bill would automatically increase the amount of total taxes payable regardless of whether or not earnings exceed the excess-profits tax credit.

Effect on Capital Investments

One of the most important questions brought up in connection with the consideration of excess-profits taxes is the probable effect of such legislation on the flow of new capital into the various industries. This is of particular significance to the oil industry because the steady growth of petroleum consumption and the active search for new oil which the industry is compelled to carry on in order to maintain adequate reserves of crude oil requires the investment of large amounts of new capital each year.

It would seem that since new capital will be permitted to earn 8 per cent, or an amount which compares favorably with the average rate of return earned in recent years, the excess-profits taxes should not unduly interfere with the oil industry's normal expansion. Furthermore, oil companies because of their high credit standing have been able to obtain new funds on the most favorable of terms and at rates substantially below the 8 per cent credit. Nevertheless, the oil industry will undoubtedly continue its policy of financing the major part of its expansion through the reinvestment of a substantial part of current earnings which, besides being the more conservative procedure, would result in progressively increasing its excess-profits credit.

Some indication as to the point at which leading oil companies will become subject to the new taxes can be obtained from Table 2, which shows invested capital, average annual earnings during the base period and net income reported for 1939.

While this discussion represents an effort to demonstrate the extent to which the oil industry and some representative companies may be affected by the presently proposed excess-profits taxes, it must be pointed out that all calculations must be qualified by several factors, chief of which are: Invested capital as shown by balance sheets and as reported for tax purposes often differs materially, certain items of income or loss are not allowed under the bill; considerable disparity exists between earnings reported to stockholders and statutory income upon which corporate income taxes are based. Furthermore, many of these differences are accentuated in the case of oil companies because of the different treatment accorded in tax returns to such items as depletion, development expenditures and intangible drilling costs.

Although a substantial part of the American petroleum industry is not included in this discussion, that part is largely made up of hundreds of small producing, refining, and marketing organizations which, either because of their size or nominal earnings, will be exempt from the excess-profits taxes because of the minimum credits allowed in the proposed bill. The Senate finance committee's report indicated that the $10,000 specific exemption has the effect of limiting the application of the excess-profits tax to less than 46,000 corporations, since of the almost 500,000 active corporations in the United States, only about 46,000 have normal-tax net incomes exceeding $10,000.

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Japan's Axis Alliance Seen As Threat to East Indian Oil

(Continued from Page 17)

While the attitude of the Japanese to the Indies in the new lineup of belligerents remains to be determined, there is no question of her deep interest in them and their resources. As long ago as 1934, the Japanese Government proposed joint development of the islands' resources by Japan and the Netherlands.

Japan's entrance into the war on the side of Germany and Italy united three countries with a common economic problem, that of petroleum supplies. For this reason, Great Britain's present measure of control over the distribution of the world's oil supplies and her ability to maintain it and prevent them from reaching her adversaries assumes additional significance. The only sources of importance immediately available to the totalitarian powers are Rumania and Russia and with Russia's hereditary enemy, Japan, now aligned with Germany, the Soviets may view their policy of supplying the latter with oil in a new light.

Germany is reported to be taking increased supplies of Russian oil. Shipments via Italian tankers through the Black Sea and thence by rail through Bulgaria, Yugoslavia, and Hungary are reported by C. L. Sulzberger, New York Times correspondent in Varna, Bulgaria, to have averaged more than 4,000 tons per week recently and are increasing. Germany is said to have constructed storage facilities for 20,000 tons of oil at Varna in anticipation of greater imports from Russia and to have seized tankers of conquered countries to transport them to Germany. The overland route is being taken because of congestion of Danubian shipping facilities resulting from heavy shipments of oil from the Rumanian port of Girgui to the Reich. It is reported that Germany may take over the Bulgarian port of Russe, opposite Girgui, and use it for a base.

Stories emanating from Rumania indicate that Germany's imports of petroleum from that country have been unsatisfactory. Last month Rumania placed seven companies which had reportedly asked permission to reduce production due to inadequate storage facilities under direction of the commissar. These companies, according to the United Press, are Colombia; Anglo-Rumanian; Romano-Americano, which is a subsidiary of the Standard Oil Co. of New Jersey; Unirea; Concordia; Steaua Romana, and Disiributzia. Germany was indicated as having influenced the move and is also said to have requested permission of Rumanian Premier Ion Antonescu to place armed Nazi guards in the oil fields to prevent sabotage.

Charges of sabotage were lodged against H. R. Freeman, of Saratoga Springs, N. Y., an official of Romano-Americano, and he was arrested but later released on representations from U. S. Minister Franklin M. Gunther. Four Britons, including one woman, a subject of Holland, and a Rumanian were also reported seized on similar charges.

The reported request of the companies for permission to reduce production is evidently justified by reports which state that Rumanian exports have been substantially curtailed and that an immediate reduction of 15 per cent in production is necessary to prevent taxing storage. These reports add that shipments to Germany have been curtailed in the last 2 months on account of other demands on railroad facilities and that thousands of workers are engaged in doubling the tracks over which the oil must move to Germany. Another report placed the need for curtailment on the reduced internal consumption due to the loss of territory to Russia, Hungary, and Bulgaria.

Rumania's oil exports have declined this year. They are reported, unofficially, to have totaled 2,132,456 tons in the first 7 months of this year against 2,858,314 tons in the corresponding period of 1939. This is a reduction of 25 per cent and since Rumanian exports far exceed her internal consumption it is evident that the oil industry has suffered. One result is reduced drilling operations, the full effect of which is not expected to be felt until 1941.

Rumanian Exports Curtailed

Rumanian exports to Germany reached a peak of 161,563 tons in July, but are reported to have been curtailed since then. The greater part of these shipments has been made via the Danube, an essential medium of transportation to Germany in her present position. The Danube is regarded as of such importance in Germany that she is reported to be contemplating taking over complete control of the river. This was revealed in the announcement by the official German news agency a week or so ago that the international Danubian commission, in Germany's eyes, no longer exists. However, Russia's dependence on western Europe for a market is likely to develop substantial Soviet opposition to any such move. Germany is believed to be seeking control of the river so that she can expedite shipments, principally of oil, before it freezes over, normally in mid-December.

Rumania's total exports in July were reported at 327,429 tons and the principal countries of destination, outside of Germany, were Greece, which got 32,905 tons; the Bohemian-Moravian protectorate, 31,681 tons; Yugoslavia, 24,047 tons, and Italy, 23,905 tons. In June Rumanian exports totaled, it is unofficially reported, 224,972 tons and in May 489,934 tons. The average in June and July, when the entrance of Italy into the war ended Mediterranean traffic, was only 9,000 tons per day against an average of 12,300 tons per day in the first half of last year.

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Lolita Field One of Texas' Most Active

(Continued from Page 16)

rowing the gap between them, and it is generally assumed that production of these areas, which is from the same depth and same pay, will be joined. There are, however, some indications that the areas may represent two separate local structures or else that a major fault separates them. It has been learned that these areas have different water levels, and in addition there is a definite overlying gas cap in the west area that has not been indicated so far in the east area.

Water level in the west-extension area is indicated as being at a depth of approximately 5,934

ft. That on the east side is believed to be a little lower.

On the basis of development to date, the structure appears to be an elongated anticlinal high, with an east-west axis, in contrast to that at West Ranch, which has proved to be more of a domal-type anticline. Like West Ranch, Lolita appears to be a multiple-sand field. Two productive sands already have been proved, the first and discovery sand being at 5,900 ft. and the more recently opened horizon at 6,400 ft. So far only one well has been drilled to the 6,400-ft. sand. Both sands are within the Frio section.

Lolita was opened by Wellington Oil Co., whose discovery well, located on a subdivision of the L-Ranch (see map), was completed May 19, 1940. This well was drilled to a total depth of 5,938 ft., where 5½-in. casing was cemented. Casing was perforated at 5,933-37 ft. and the well flowed on potential test at the rate of 335 bbl. of 34-gravity pipe-line oil daily on a ⅝-in. choke.

Location of this well is just south of the St. L. B. & M. Railroad right-of-way, and also the highway, about 2 miles east of the Lolita townsite and about a similar distance west of La Ward townsite.

The field quickly assumed importance when just 3 weeks later Barnsdall Oil Co. completed as a good producer a wildcat located on its Lazarus tract a little over a mile west of the Wellington producer. Total depth of this well is 5,932½ ft., with top of gas sand at 5,907 ft. and oil zone at 5,916 ft.

As offset acreage around both wells is held by various companies, an immediate drilling play was forced. Within 30 days six drilling rigs were running in the area.

The 6,400-ft. sand was discovered by Magnolia Petroleum Co. in a north offset, across the railroad right-of-way from the Wellington discovery well. This well (No. 1 Four-Way ranch) not only ran a little lower than the discovery well, but also found less than 5 ft. of sand, this being at 5,944-49 ft. Casing was set to test this sand but after repeated unsuccessful attempts to squeeze off gas the hole was deepened, picking up the lower sand, a 7-ft. section. A string of liner was set for this sand and, perforated at 6,395-98½ ft., the well flowed on potential 130 bbl. in 18 hours on a ½-in. choke.

While this well apparently indicates a limit for the 5,900-ft. discovery sand on the northeast, it opens the way for extended development in the deeper and possible lower sands in that direction.

The area in which the field is located is typical flat coastal plain, largely pasture land. Originally, much of that part of the field taking in the east side of the production was taken in by two large ranches, the L ranch and the Four-Way ranch. This has since been subdivided into 10, 20, and 40-acre subdivision for agricultural development. Elevation of the field ranges from 45 to 55 ft.

Development at Lolita is being carried out on the basis of one well to 10 acres. Allocation of production is on a basis of 75 per cent of the allowable on acreage and 25 per cent on the well. Present allowable for the field is approximately 560 bbl.

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Pacific Coast Industry Starts Campaign of Enlightenment

ABILITY of the United States petroleum industry to supply any conceivable demand in the defense program and the part it has played in immunizing this country against attack is being broadcast to the readers of 900 newspapers on the Pacific Coast during the week of September 30 to October 5. In space purchased by the Pacific Coast Petroleum Industry the story of preparedness by the industry is being told in simple, one-cylinder words. Stress is placed on the industry's ability to manufacture 2,000,000 gal. of 100-octane aviation gasoline every day and the advantage this fuel gives to our military planes.

"The same bomber," the advertisement says, "can fly 30 per cent faster and farther in the United States than in Europe. It can carry 20 to 30 per cent more bombs; it can climb above antiaircraft fire 25 per cent quicker and its engines will last almost twice as long because in America we can make aviation gasoline just that much better than any other country." Present production of 100-octane gasoline is enough to fuel five times as many military planes as we now have in service and, the advertisement asserts, America's oil companies can expand their refineries to provide aviation fuel for 50,000 planes, or even more, faster than the planes can be built.

The schedule breaking this week in Pacific Coast papers is captioned, "How to Avoid War." The copy follows the theme of safety in strength and shows how the oil industry is not only prepared to meet requirements for fuel but for production of other defense materials. Specific reference is made to the industry's program of producing synthetic rubber even to extent of 100 per cent of the nation's requirements. Preparations of the industry to manufacture 60,000,000 gal. of toluene annually to supplement the supply of explosives is another point made in the copy.

In releasing the ad, Clarence Beesemyer, vice president and general manager of Gilmore Oil Co., and chairman of the committee directing the public-relations project, made the following statement:

"The petroleum industry's great crime has been industrial modesty. Blushingly whispering compliments to itself, it has kept the public in ignorance of its activities, aims, and accomplishments. The chief difficulty with our public relations is misconception, caused by lack of knowledge.

"As a case in point, petroleum has a thrilling story to tell of its part in national defense, but most of that story has been hidden from the public between the covers of industry trade journals. If we want the people to think well of us, we must give them something to think about. It's time we told them our story."

Until publication of the advertisement this week, the Pacific Coast group had confined its public-relations activity to organization. Plans are under way to start active operation of the program under an enlarged committee representative of all phases of the oil industry. The basic campaign covers employe education, group contacts and public speaking, and press relations.

The program is indicative of a trend toward localized efforts where local groups deal with problems peculiar to their section.

DEATHS

JOSEPH M. KUNKEL, 75, died September 23 at the Mountain Clinic, Olean, N. Y. He had been ill for the past year. Born December 19, 1864, he went to Eldred, N. Y., in 1886. He had resided in that vicinity ever since, being employed in the local oil fields. Surviving him are three daughters.

GARLAND G. HARDIN, 32, of Blanchard, La., employe of the United Oil Pipe Line Co., was instantly killed September 23 when his automobile crashed into a switch engine of the L. & A. Railway at a crossing between Waskom, Tex., and Lorraine, La. The car was demolished. At the time of the accident, Mr. Hardin was en route to Longview, Tex., to visit his sister and other relatives. He is survived by his father, mother and three sisters.

ARTHUR P. BANDY, 49, auditor for Selby Oil Co., Tulsa, was found dead Sunday afternoon in the backyard of his home, a bullet wound in his head. Mr. Bandy had been in ill health for some weeks and had recently undergone a minor operation. He had been connected with the Selby company for many years.

CLAIR HANLEN, 48, of Mount Jewett, Pa., died in the Kane Summit Hospital, September 26, of injuries received when he apparently fell against a moving engine belt at the pressure plant of the Phoenix Oil Co., where he served as engineer. Coroner Thomas Clark, of Bradford, ruled death was accidental. Mr. Hanlen, who was born in Iowa Mill, Pa., had resided in Mount Jewett for the past 12 years. He leaves his widow and one daughter.

SAMUEL T. CARSON, 72, well-known northwestern Pennsylvania oil operator, died at his home at Washington, D. C., last week. Mr. Carson was born August 11, 1868, at Neiltown, Pa. In 1895 he married Miss Lucy Anderson at East Hickory, Pa. He resided in Tionesta for a short time, moving to Bradford in 1915 where he was engaged in the oil business. In 1939 he moved with his family to Washington, D. C. Surviving are his wife and two daughters, Marjorie and Mrs. Marian Freund, of Washington, D. C.

LaMAR JONES, 39, petroleum engineer for Humble Oil & Refining Co. at Houston, Tex., died in a Houston hospital shortly after being injured in a traffic accident that occurred near Houston September 23. Following graduation in 1928 from University of Oklahoma Mr. Jones joined the Humble Oil & Refining Co., being located in its North Texas division. At one time he was district superintendent at Pampa. On January 1, 1935, he was transferred to the petolreum engineering department at Houston. Mr. Jones was married in 1929 to Miss Margaret Mark of Mitchell, Neb., and his survivors are Mrs. Jones and their two children, Ramon Mark and Coryl.

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THE MARKETS*

CRUDE OIL: Competition for crude connections in the Southwest appears to be growing. Several purchasers have extended transportation facilities into new areas in the past few weeks. Reluctance of purchasers to entertain lower allowables in most of the states indicates a reasonably firm crude market. Modest reductions in aboveground crude stocks have been reported for 3 consecutive weeks, totaling 3,656,000 bbl.

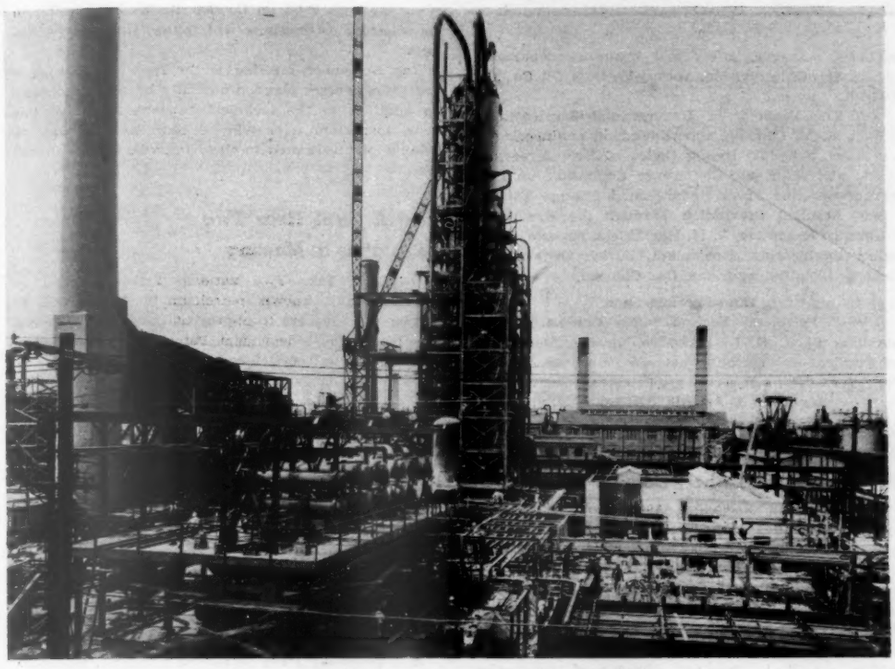
REFINERY: Refinery prices in general are unchanged. Lower prices for residual fuel oil were quoted this week on the Pacific Coast reflecting decreased trade with Japan. Motor-fuel prices are soft on the Gulf Coast and along the Atlantic seaboard. Distillate fuel prices are firm at quoted levels and tending to move higher in the interior market.

TANK-WAGON AND POSTED DEALER: Reductions in tank-wagon prices made the last week in September along the Atlantic seaboard have more than offset the improvement at a few scattered interior points. Tank-wagon deliveries of fuel oil in the northern and eastern sections of the country are being made more generally at the quoted range with a corresponding decline in price concessions by smaller dealers.

FINANCIAL: Oil securities gained almost a point in the early part of the week ended September 28 but settled back to only a little above the low. Average of 30 representative stocks for the week ended September 28: High, 22.37; low, 21.37; close, 21.44. Week ended September 21: High, 22.01; low, 21.39; close, 21.80.

*Detailed information in Market Section.

Refinery Expansion



Construction view of Texas Co.'s new 25,000-bbl. topping unit at Port Arthur, Tex. Three pipe stills serving unit are left of the new tower with exchanger batteries in foreground. Note dual vapor lines from tower

TEXAS CO. COMPLETING 25,000-BBL. TOPPING UNIT AT PORT ARTHUR

HOUSTON, Tex.—Construction of the Texas Co.'s 25,000-bbl. per day Foster Wheeler topping unit at the Port Arthur, Tex., refinery is practically completed and a trial run will be started within the month. The new unit consists essentially of three pipe-still heaters, 37 large exchangers and an 18 by 120-ft. fractionating tower. The unit was designed to provide wide flexibility in its operation so that crudes coming from several sources might be processed. The new equipment will permit the company to dismantle certain old shell-still units which are less economical. Therefore, the addition of this unit does not mean a proportionate increase in the crude capacity of the refinery.

However, exclusive of this equipment, the Port Arthur plant has capacity to completely process 135,000 bbl. of crude daily. Also in the nearby Port Neches plant the company has capacity to process 36,000 bbl. of crude daily, running mostly for asphalt production, so in this immediate area the Texas Co. will soon have available capacity for processing 196,000 bbl. of crude daily.

Prince Planning Refinery For Tinsley Field

JACKSON, Miss.—H. M. Prince, of Jackson, is planning erection of a combination topping, cracking, and reforming unit at Yazoo City, Miss., to process crude oil from the nearby Tinsley field. It previously was announced that the plant was being planned by Prince Brothers of Electra, Tex., but this company has no connection with the planned project. The refinery reportedly will be capitalized by Yazoo City and other local parties, but no definite decision has been made and no site selected.

Nebraska Refinery Plans New Work

SCOTTSBLUFF, Neb.—Terry Carpenter, Inc., operators of a 1,700-bbl. refinery here, is planning a plant-expansion program involving an expenditure of $50,000. The plant contains a 700-bbl. cracking unit.

Coastal to Add Storage And Blending Plant

HOUSTON, Tex.—An expansion program on the Coastal Refineries, Inc., plant at Port Isabel, Tex., including construction of additional storage tanks and a tetraethyl-lead blending plant, is expected to get under way shortly. The refinery, of 6,000 bbl. daily capacity, recently acquired additional land near its site, and this is now being cleared and graded, preparatory to beginning construction.

Natural Gasoline

Southwest Texas Recycling Plant to Open This Month

HOUSTON, Tex.—Operation of the recycling plant of W. R. Davis, Inc., in the Alice field of Southwest Texas is expected to be started about the middle of October, after having been postponed for several weeks due to a wild gas well causing a water well in the plant yard to crater. The new plant will handle the gas-condensate production of 11 nearby wells, stripping the condensate and returning the high-pressure residue gas to the producing formation.

Workmen have been cleaning several hundred tons of mud and water from the plant buildings and yard, deposited there by the water well which sprayed mud and sand over 40 or 50 acres in the plant vicinity. When the water well first began cratering early in August it appeared that the plant's power station might be damaged seriously as well as pumping equipment. The well, however, began blowing through the casing instead of outside it so that total damage to the plant, which cost over $1,000,000, is not expected to exceed $100,000.

California Natural-Gasoline Output Higher in August

LOS ANGELES, Calif.—Production of natural gasoline in California during August increased to 39,000 bbl. daily, as compared with 38,000 bbl. in July, the Bureau of Mines has reported. Total production during August amounted to 1,203,000 bbl. or 50,508,984 gal. Following is a summary by fields of plant operations in that state during August.

	Gas treated M.c.f.	Natural gasoline produced, gal.
San Joaquin Valley:		
Beiridge	3,011,110	1,890,857
Elk Hills	64,981	138,016
Kettleman Hills	7,762,122	10,978,871
Midway-Sunset	916,730	1,965,788
Mountain View	224,146	334,733
Miscellaneous	1,586,468	1,107,677
Coastal district:		
Elwood	338,885	448,100
Rincon	176,606	221,445
Santa Maria	189,314	504,352
Ventura Avenue	3,170,025	5,055,354
Miscellaneous	459,405	479,550
Los Angeles Basin:		
Brea-Olinda-Coyote	426,163	1,549,063
Dominguez	1,229,869	2,019,420
El Segundo	31,970	120,734
Huntington Beach	710,014	2,650,156
Inglewood	239,267	331,382
Long Beach	2,368,469	7,956,556
Montebello	2,643,158	2,127,606
Richfield	232,451	703,897
Rosecrans	1,360,888	1,476,296
Santa Fe Springs	1,311,717	4,916,419
Seal Beach	311,873	509,210
Torrance	239,984	735,776
Miscellaneous	1,102,687	2,197,726
Total (all fields)	30,108,302	50,508,984

Gas-Recycling Plant Planned For Southwest Texas Field

HOUSTON, Tex.—Standard Oil Co. of Texas is reported to be planning the construction of a recycling and gasoline plant in the Sejita field, Duval County. While details of the plant are not available, the company is engaged in making contracts with lease, royalty and land owners in the general area for the purpose of unitizing at least a portion of the block of the project.

It is planned to consolidate all acreage on the mapped structure. Royalty owners would receive one-eighth of the total output of the plant, their interest being divided by the quantity of acreage held in the unit. The leaseholders would participate in the production on an overriding royalty basis which would be calculated in a similar manner. Standard will drill all wells, lay gathering system, build the plant and arrange for the marketing.

Natural Gas

East Ohio Expands in Ashtabula Area

East Ohio Gas Co. is carrying on an extensive development of the natural-gas area in Ashtabula County, Ohio. This program involves the drilling of wells and the laying of lines for a gathering system.

United Gas Serves Brooks Field, Tex.

United Gas Co. has laid a lateral to Brooks Field, an advanced training school of the U. S. Army Air Service, near San Antonio, Tex., which has been enlarged recently as part of the expansion of the military aviation program.

News of Pipe-Line Activity, which is usually found on this page, will be found on Page 53.

PROGRAMS AND MEETINGS

W.P.R.A. Announces Programs Of Two Meetings

The program arranged for the 1940 Wichita regional technical meeting of the Western Petroleum Refiners Association on Friday, October 4, will open with a paper entitled "Economics and the Relationship of Alternate Products to Refinery Margins," by C. E. Votrian, treasurer, Bareco Oil Co., Tulsa. Mr. Votrian has studied this particular problem for years and is considered one of the best authorities on the subject.

The second paper on the program will be "Comparison of Catalytic and Thermal Cracking" by Socony-Vacuum Oil Co., Inc., in collaboration with E. B. Badger & Sons Co. This paper will bring out the recent improvements in both the thermal and catalytic processes of cracking, and economic values of both will be analyzed.

"Catalytic Desulfurization" will be presented by M. W. Conn, Perco, Inc., Bartlesville, Okla. This method of treating is rapidly gaining prominence in the industry.

Petroleum Section, National Safety Congress, Will Meet in Chicago

Fire regulations and the effect of recent legislative trends on safety will be two of the topics discussed during the meetings of the Petroleum Section of the National Safety Congress to be held at Chicago, October 7 to 11.

General chairman for the Petroleum Section is C. J. Nobmann, manager of safety department, Shell Oil Co., Inc., Sacramento, Calif. Chairmen for the various divisions are: Charles A. Miller, assistant to the personnel manager, Texas Co., Houston, Tex., pipe lines; H. T. Markee, supervisor of safety, Phillips Petroleum Co., Bartlesville, Okla., production; J. Howard Myers, supervisor of safety and fire-protection division, Atlantic Refining Co., Philadelphia, Pa., manufacturing; and F. R. McLean, manager safety and insurance departments, White Star-Ohio division, Socony-Vacuum Oil Co., Inc., Detroit, Mich., marketing.

All of the sessions of the Petroleum Section will be held in the upper ballroom of the Stevens Hotel Tower. Meetings will be held each afternoon from Monday to Wednesday, inclusive, with a Thursday luncheon concluding the program. Following is the complete program of meetings of interest to oil men:

Monday Afternoon

2:30 Annual reports.

3:00 Cleaning Tanks Which Have Been Used for the Storage of Leaded Gasoline, O. B. Lewis, manager, safety division, Ethyl Gasoline Corp., New York City.

3:30 Discussion.

3:45 When and Where, and If So What, Fire Regulations Are Needed for Producing Fields? George F. Prussing, safety engineer, Union Oil Co., Los Angeles, Calif.

Tuesday Afternoon

2:30 Photography as a Visual Means of Education in Accident Prevention, T. S. Maffitt, Jr., safety manager, Houston Oil Co. of Texas, Houston, Tex.

3:15 Election of 1940-41 officers.

3:30 Enlisting Employes in the Accident-Prevention Program. (Panel discussion.) Discussion leader—J. L. Risinger, safety supervisor, Socony-Vacuum Oil Co., Inc., New York City. Participants: J. Howard Myers, supervisor, safety and fire-protection division, Atlantic Refining Co., Philadelphia—eastern representative. George F. Prussing, safety engineer, Union Oil Co., Los Angeles, Calif.—western representative. J. W. Welch, safety engineer, Cities Service Oil Co., East Braintree, Mass.—northeastern representative. W. W. Weldon, director of safety, Standard Oil Co. of Louisiana, Baton Rouge, La.—southwestern representative.

Wednesday Afternoon

2:30 Effect of Legislative Trends on Safety, F. R. McLean, manager, safety and insurance department, White Star-Ohio division, Socony-Vacuum Oil Co., Inc., Detroit.

3:15 The Problem of Underground Service-Station Tanks, R. M. Cadman, superintendent, engineering department, Schedule Rating Office of New Jersey, Newark, and chairman, Conference Committee on Leakage of Gasoline From Underground Storage Tanks.

4:00 Accident Prevention Through the Eyes of an Insurance Executive, R. M. MacDonald, superintendent, safety engineering department, Zurich General Accident & Liability Insurance Co., Chicago.

Thursday Luncheon

1939-40 Petroleum Section Safety Contest. (*a*) Outstanding Facts, H. N. Blakeslee, director Department of Accident Prevention, American Petroleum Institute, New York City, and secretary, Petroleum Section, N. S. C. (*b*) Presentation of Awards. (Officer of N. S. C.)

Recycling Association Will Hold Symposium and Short Course

The American Recycling Association will hold a symposium and short course on recycling, pressure maintenance and associated subjects at Texas College of Arts and Industries, Kingsville, Tex., November 5 and 6. The newly formed association was organized to serve the dissemination of information on condensate recovery and recycling operations. Appointed to the committee for arranging the first fall short course are: R. L. Peurifoy, director of engineering, Texas A. & I., Kingsville, chairman; E. E. Deback, Coastal Recycling Co., Corpus Christi; E. V. Foran, Foran, Knode, Boatwright & Dixon, Houston; C. H. Gee, Bishop, Tex.; Jack Winters, Baytown, Tex., and F. H. Dotterweich, Texas A. & I., Kingsville.

Six papers will be presented at the November meeting. The subjects and authors are: "Methods of Condensate Recovery," by Henry Wade, of Parkhill-Wade, Los Angeles, Calif.; "Prediction of Subsurface Flows," E. V. Foran, Houston, Tex.; "Deviation of Natural Gas From Boyle's Law," George Granger Brown, University of Michigan, Ann Arbor, Mich.; "Physical Properties of Hydrocarbon Mixtures in Condensate Production," Dr. F. H. Dotterweich, Texas A. & I., Kingsville, Tex.; "The Operation of the Podbielniak Apparatus," Walter J. Podbielniak; and "Testing and Sampling Methods Used on Condensate Wells," speaker to be selected. Discussions will follow all presented papers.

The November meeting is the first of the regular fall short courses planned annually by the association. In addition to the technical sessions scheduled this year, inspection trips will be conducted through recycling plants located in the Kingsville-Corpus Christi area.

CALENDAR

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Wichita, Kans., October 4.

AMERICAN GAS ASSOCIATION, Atlantic City, N. J., October 7-10.

NATIONAL SAFETY CONGRESS, Stevens Hotel, Chicago, October 7-11.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, fall convention, Hotel Severin, Indianapolis, Ind., October 9-10.

AUTOMOBILE MANUFACTURERS ASSOCIATION, Auto Show, New York, October 12.

SOCIETY OF AUTOMOTIVE ENGINEERS, annual dinner, Hotel Commodore, New York, October 14.

NATIONAL STRIPPER WELL ASSOCIATION, Dallas, Tex., October 15.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, eleventh annual meeting, Dallas, Tex., October 16-18.

PETROLEUM DIVISION, A.I.M.E., Los Angeles, Calif., October 17-18.

AMERICAN WELDING SOCIETY, annual meeting in conjunction with National Metal Exposition, Hotel Cleveland, Cleveland, Ohio, October 20-25.

PETROLEUM DIVISION, A.I.M.E., October 24, 25, and 26, Tulsa.

WESTERN PETROLEUM REFINERS ASSOCIATION, regional technical meeting, Shreveport, La., October 25.

I.P.A.A. Will Hear Two Legislators at Meeting

DALLAS, Tex.—Two national legislators and an internationally known petroleum geologist will be among the speakers to appear at the eleventh annual meeting of the Independent Petroleum Association of America, in Dallas, October 16-18.

Wesley E. Disney, representative in Congress from the first district of Oklahoma, will speak at the luncheon meeting October 17, on legislative questions of interest to oil men. Mr. Disney's district includes Tulsa and the major interest of the region is petroleum. Among the members of Congress he is looked upon as an authority on questions concerning the oil industry.

Hatton W. Summers, congressman from the Dallas district, will be the principal speaker at the annual banquet Friday night, October 18. Mr. Summers has served 14 consecutive terms in Congress and is chairman of the important judiciary committee of the House.

A. I. Levorsen, Tulsa petroleum geologist, will speak Thursday afternoon on "Geological Outlook for Future Oil Discovery." Mr. Levorsen is past president of the American Association of Petroleum Geologists and is chairman of the research committee of that association. His subject is one that is always of primary importance to oil producers.

Additional to these speakers are numerous others, officers and members of the I.P.A.A., who will in addresses and reports discuss current and prospective problems of the independent producing industry. An outstanding feature of the meeting will be the report of the Committee of 29, created by the I.P.A.A. directors in July to make a thorough study of such problems. This committee has had three meetings and will meet again in Dallas the day preceding the opening of the meeting to complete the report. It is expected that a complete and clear-cut statement and a recommended plan of action will be presented to the membership.

Petroleum Accountants Elect Officers and Directors

The Petroleum Accountants Society, Tulsa, held its first meeting of the year on September 26, when officers were elected to serve for the ensuing year, and three directors were elected for a 3-year term.

Norman C. Cross, secretary-treasurer of Superior Oil Corp., was elected president; B. E. Witchell, Phillips Petroleum Co., Bartlesville, first vice president; A. W. John, Tide Water Associated Oil Co., second vice president; and F. T. Anderson, Darby Petroleum Co., secretary-treasurer. Retiring officers are: R. B. Hansen, president; B. E. Witchell, first vice president; L. E. Tustison, second vice president; and Norman C. Cross, secretary-treasurer.

The newly elected directors were: F. T. Anderson; J. B. Bass, Continental Oil Co., Ponca City, Okla.; and Virgil Marshall, Skelly Oil Co. Messrs. Cross, John, Witchell, and R. B. Hansen, M. H. Massey, Stanolind Oil & Gas Co., and L. E. Tustison, Carter Oil Co., are the six holdover directors.

MAGNETIC STORM

TUCSON, Ariz.—A moderate storm began at 11 a.m. September 26 and ended at 2 a.m. September 27, central standard time.

Service on Active Fields

Stribling Field, Stephens County, Texas

Compiled by The Oil and Gas Journal

Approved name
Stribling field.

Geographic location
It is about 15 miles north of Breckenridge, Tex., in the northwest part of Stephens County. It is just a mile south of the Clear Fork of the Brazos River.

Principal cities and towns near field
The field is 3½ miles west of Crystal Falls; 15 miles north of Breckenridge; 35 miles southwest of Graham; and about 100 miles south of Wichita Falls.

Location of supply houses
Principal supplies are obtained from Breckenridge, Graham, and Wichita Falls. Practically all supply companies have stores in all three of these towns.

Railroads serving the area
The main railroads serving the area are the Wichita Falls & Southern to Breckenridge and the Cisco & North Eastern to Crystal Falls.

Trucking and hauling facilities
Several trucking companies are located in Breckenridge and Graham; however, most of the trucking is done by companies out of Wichita Falls or Fort Worth.

Hotels and other accommodations
Excellent hotel accommodations may be had in Breckenridge as well as adequate housing facilities.

Schools and churches
Breckenridge has several churches and a modern public-school system.

Electric power and gas companies
Although no public-service company has extensive electric operations in the field, all of the surrounding towns are well supplied with electricity. Hanlon & Buchanan and Lone Star Gas Co. operate common carrier lines in the area, the nearest line being 2 miles away.

DEVELOPMENT

Early development
A. A. Horwitz and W. P. Oldom, Wichita Falls, Tex., operators, drilled the discovery well in April 1938. This well came in for about 2,000 bbl. daily and an offset was immediately started on the adjoining tract. The second well showed even better than the first, but complications set in due to the fact that, although there were six major pipe-line companies with lines in the area, none offered to purchase the oil. Finally, Texas Pipe Line Co. agreed to buy the oil if the operators would erect tanks at the company's line and truck the oil from the leases to this tank farm. This was done and Horwitz & Oldom then drilled three additional wells. The Texas Pipe Line Co. was again contacted and early in 1940 Horwitz & Oldom laid a 10-mile pipe line to the company's main carrier, this being a 4½-in. line.

Subsequent development
As soon as the pipe line was completed other operators entered the field and several producers and dry holes were drilled during the following months. All oil from new operator's wells was run through the pipe line, now leased to Texas Pipe Line Co.

Deep horizon discovery
In July of this year Horwitz & Oldom's No. 4 Maury, in the center of the field, was barren in the regular Caddo lime and was carried deeper as an exploratory hole. At a total depth of 4,713 ft., drilling halted and 5½-in. casing was cemented at 4,700 ft. An electrical survey of the hole had shown water below the casing plug, so the plug was never drilled. Casing was perforated with 140 shots at various points between 4,400 ft., which was the top of the Mississippian lime, and the top of the cement. The well was completed for 800 bbl. daily to open the new deep level.

Completions to date
There have been 16 wells completed from the Caddo lime, five of which were plugged due to noncommercial production. Only the discovery well has been completed from the deep Mississippian lime, making a total of 12 actually producing wells at present in the field.

Present drilling operations
There are two wells drilling and seven locations staked in the field.

Present daily average production
The per-well allowable in the field is 38 bbl. The deep discovery, pending a Railroad Commission hearing late in September, is produring 65 bbl. daily. This makes a total of 369 bbl. daily for the field.

Spacing pattern
Wells are drilled on 40-acre units with a 10-acre tolerance on the last unit. Well allowables are based 50 per cent on per-well and 50 per cent on acreage.

Present owners of leases in field

Name of firm—	Address	Number of wells
Horwitz & Oldom	Wichita Falls, Tex.	7 (one being deep)
W. B. Omohundro	Wichita Falls, Tex.	2
Falcon Oil Co.	Fort Worth, Tex.	2
Falcon Oil & Greathouse	Fort Worth, Tex.	1
		12

GEOLOGY

Method of discovery
Ford Bradish, independent geologist of Fort Worth, when formerly with the Empire Oil Co. in West Central Texas, collected material and logs from all wells drilled in northern Stephens County. From subsurface correlations the structure was recommended to Horwitz & Oldom, who drilled the discovery well.

General geology of field
The structure is a fold extending north and west from the large closed geological feature about 6 miles north of the city of Breckenridge. Before the field was discovered it was referred to as the Ball structure. There is approximately 10 to 15 ft. of closure on top of the structure; however, production in the field is mainly dependent upon saturation and porosity. Several possible shallow producing levels are found in the Strawn. However, to date no production has resulted therefrom.

Until Horwitz & Oldom drilled the deep discovery well, no deep test had been made in the field. The geological information revealed by this deep test indicates that there is a shallow, local low extending north and south through the field and embracing the McAdams failure, the Falcon Oil and Greathouse failure, through the deep discovery area, and northward to the Steadman Petrol Co.'s plugged well.

With the exception of the Mississippian lime producer, all wells in the field are producing from the Caddo lime from approximately 3,550 to 3,600 ft.

FUTURE DRILLING

Proven area
Approximately 1,000 acres for the regular pay and, conservatively, only one proration unit of 40 acres for the deep producer.

Undrilled locations in proven area
Approximately 14 based only on present acreage proven.

DRILLING CONDITIONS

Type of equipment used
Early wells drilled with cable tools, but all wells now drill to the top of the Caddo lime with rotary and finish with cable tools.

Water in the field
Plenty of water is available in the Clear Fork of the Brazos River just a mile north of the field.

Casing program
All wells to date are equipped with 7-in. o.d. casing, but it is the intention of operators to run 5½-in. o.d. casing for all future wells due to the fact that it is not necessary to do any cleaning out. The deep discovery well drilled open hole from bottom of surface pipe to the total depth of 4,713 ft. and cemented 5½-in. at 4,700 ft.

Completion practices
Casing is cemented on top of the Caddo lime and the saturated lime is drilled with cable tools due to the fact that the lime has a tendency to absorb a great deal of drilling mud.

Speed in drilling
Wells in the field are drilled in from 14 to 18 days, the first 1,800 ft. being drilled in about 4 or 5 days.

Drilling problems

No problems are experienced in the field. Some operators report some difficulty when passing through a gas sand at about 1,800 ft. However, a string of casing is not needed to seal it off.

PRODUCING PRACTICES

All wells are flowing and making their allowables. The regular setup of tubing to separator to storage tanks is used in the field.

GENERAL PHYSICAL DATA

Pressures

Estimated bottom-hole pressure (lb.)	1,600
Approximate casing pressure (lb.)	800
Approximate tubing pressure (lb.)	200-375

(Pressure data not reported on deep well)

Gas-oil ratio

An average of 2,000 cu. ft. of gas per barrel of oil from the regular pay.

PIPE LINES

From the field: Sinclair Prairie, 3 miles; Humble, 5 miles; Magnolia, 5 miles; Gulf, 5 miles; Illinois, 9 miles; Texas Co., 10 miles. The last-named company is the only one connected with the field and that by the carrier built by Horwitz & Oldom to the company's trunk line. The line is leased to the Texas Co. for operation and the field's operators pay 7½ cents per barrel through the line.

CRUDE-OIL ANALYSIS

	Per cent
A.P.I. gravity	42.3
Gasoline	40.3
Kerosene	13.7
Residue (fuel oil)	41.3
Distillation loss	4.7

Crude oil distillation—1,500 cc. Hempel (°F.):

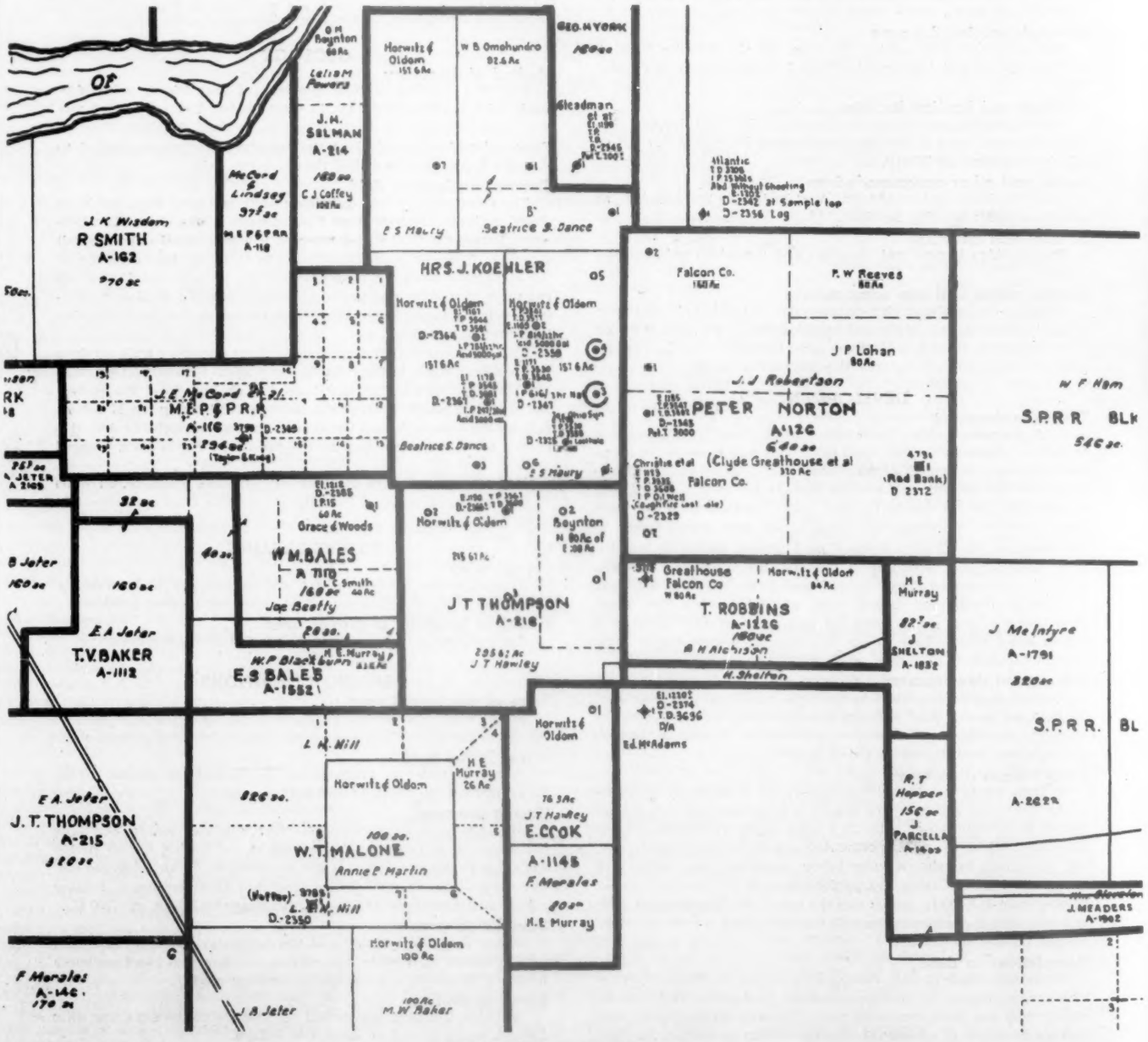
I.B.P.	84	40.3 per cent (gasoline cut)	390
5 per cent	132	50 per cent	476
10 per cent	183	54 per cent (kerosene cut)	500
20 per cent	252	Gravity (A.P.I.)	42.3
30 per cent	316	B.s. and w.	trace
40 per cent	386		

Tests on products of distillation:

	Gasoline	Kerosene	Residue
Yield, per cent	40.3	13.7	41.3
Gravity, A.P.I.	61.2	40.8	25.7
Octane No. (L-3)	53.5		
I.B.P.	96	377	...
5 per cent	130	398	...
10 per cent	146	407	...
20 per cent	182	418	...
30 per cent	208	426	...
40 per cent	226	433	...
50 per cent	248	442	...
60 per cent	266	451	...
70 per cent	292	462	...
80 per cent	316	472	...
90 per cent	353	492	...
End point	430	538	...

Note: The high losses incurred in running a light crude in the laboratory reduces the gasoline yield. In actual plant distillation equipment the gasoline yield would be at least 2 per cent higher than this report shows.

Laboratory tests by E. W. Ellis, chief chemist, Panhandle Refining Co.



Stribling field, Stephens County, Texas

When treating oil, tests must be made to see if it has reached the desired gravity before it can be delivered to the pipe line. Here a pipe-line gager thiefs a tank while he has a direct-reading hydrometer and thermometer handy to obtain the gravity

ENGINEERING & OPERATION

In This Section

OCTOBER 3, 1940

TALCO TREATING METHODS PROVIDE FUEL ECONOMY, MORE SETTLING TIME
By George Weber ..... Page 34

In the Talco field of East Texas reduced payout requires efficient treating. Emulsions are not difficult to break, but large volumes of water must be separated before treating temperatures are obtained so that the problem is resolved into the phases of mechanical dewatering and fuel economy in heat treating.

HYDRAULIC PUMPING COST DATA
By Dan Cox ..... Page 37

Due to the large volumes of water that must be lifted, the Iglehart area of Oklahoma constitutes an excellent proving ground for pumping equipment. Cost data for seven hydraulic units over 1 year's period, including lifting, repairs, maintenance and down-time expenses, are given.

PROCEDURE FOR CLEANING SLOTTED LINERS DEVELOPED IN CALIFORNIA
By T. P. Sanders ..... Page 40

A recently introduced procedure for cleaning slotted liners has shown conspicuous success on many of the 125 California wells on which it was used. The new method combines both mechanical and hydraulic action.

COST OF CENTRIFUGAL-PUMP POWER CUT BY CHECKUP ..... Page 41

Centrifugal pumps can become the worst kind of "power hogs" if their characteristics are not correct for the service in which they are placed. An example of how power costs of one unit were reduced by a checkup is described.

SAFETY ATTITUDE OF OIL INDUSTRY RESULTING IN FEWER ACCIDENTS
By Harry F. Simons ..... Page 45

During the past 12 years the oil industry has become increasingly conscious of accident prevention. Progress made in the various branches, causes of accidents and steps taken toward their prevention are discussed.

SAFETY: Wire-Mesh Guards Prevent Accidents ..... Page 52
OPERATING IDEAS ..... Page 48
QUESTIONS ON TECHNOLOGY—By W. L. Nelson ..... Page 47

Talco Treating Methods Provide Fuel Economy and More Settling Time

By GEORGE WEBER

As salt-water encroachment progresses in the Talco field of East Texas, operators prepare to handle greater water volumes. On July 1, 1940, a total of 714 wells were producing in the field. Of that total 80 per cent were making salt water in varying proportions. Salt-water withdrawal almost equaled oil production and by this date is estimated to have exceeded it.

The 1939 state-wide shutdowns in Texas benefitted Talco operators in cutting back salt-water withdrawals. With shutdowns lifted, however, salt-water production is now increasing and may be expected to continue the trend for several months to come.

Drilling has been revived to a limited extent in Talco during 1940, with 25 well completions, principally at the east and west ends of the elongated fault-line field. To date only 10 wells have been plugged this year. While the crude-market situation is improved since a 10-cent increase to 65 cents in the posted price a year ago, allowables are less and leases must be produced on a longer pay-out basis.

Trend in Salt-Water Production

Table 1 traces the trend in salt-water production at Talco. Total salt-water withdrawals were curtailed during late 1938 and 1939 by shutdowns and by abandonment of many wells making large volumes in the closely drilled townsite area. The percentage of wells making water has steadily risen, however, and encroachment on many leases will force operators to consider future treating problems, particularly this winter.

Water separation at Talco presents no difficult problems, but reduced payout requires efficient treating in the field. The problem is resolved into two principal phases: mechanical dewatering and fuel economy in heat treating. Emulsions are not difficult to break, but large volumes of water must be separated before treating temperatures are obtained. Corrosion causes little damage to equipment when ordinary precautions are taken against it. Chemicals play an important part in treating Talco crude, and their required ratios vary widely with the character of the emulsion, treating temperature maintained and relative volumes of oil and water.

Talco poses a fuel problem found in few oil fields. The crude is a heavy asphaltic oil containing very little gas. Therefore it is necessary for field operators to purchase outside fuel gas for use in treating. Gas for lease purposes costs 20 cents per 1,000 cu. ft. for the first 100 M.c.f., 14 cents for the next 900 M.c.f. and 12 cents for all over 1,000 M.c.f. used per month.

Since treating temperatures of 145°-160° F. are generally necessary, the fuel item becomes a major one in Talco treating economy. With increased settling time and more chemicals, temperatures from 120°-130° F. can be successfully used in treating. An economic balance among chemical costs, investment in settling equipment and fuel costs governs the methods used on individual leases. The expected increase in treating costs, coupled with declining production necessitates a careful cost study on many leases.

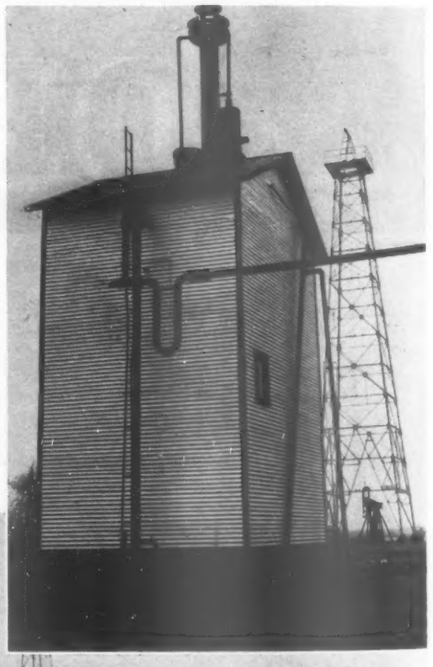
Since Talco crude is of such low gravity, it separates from slightly heavier water so slowly that long settling time and large-capacity tanks are needed. Gravity conservation is not a major consideration, since the crude is sold at a flat posted price and its major use is in manufacture of asphalt.

Treating Methods

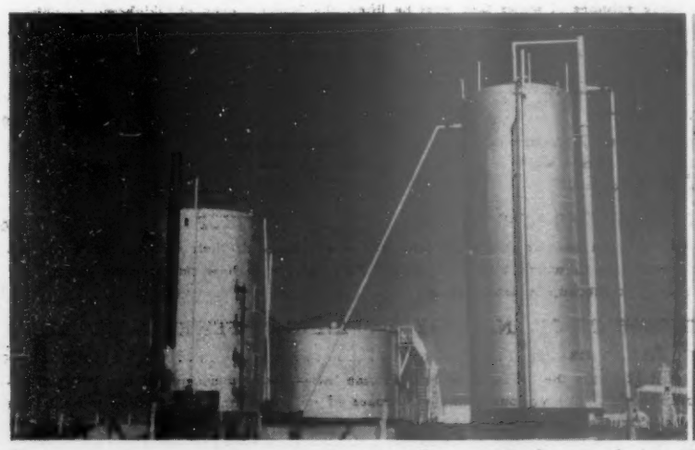
Regular hay tanks consisting of baffles, excelsior section and heater were used originally in the field and still predominate. Packed with excelsior which does not readily become spent, they will operate upwards of 2½ years without repacking if channeling is prevented. Treating units of more advanced design, but still employing an excelsior section are finding acceptance in the field. The conditions peculiar to Talco, however, necessitate modifications is installing such units, and require their use in conjunction with dewatering units.

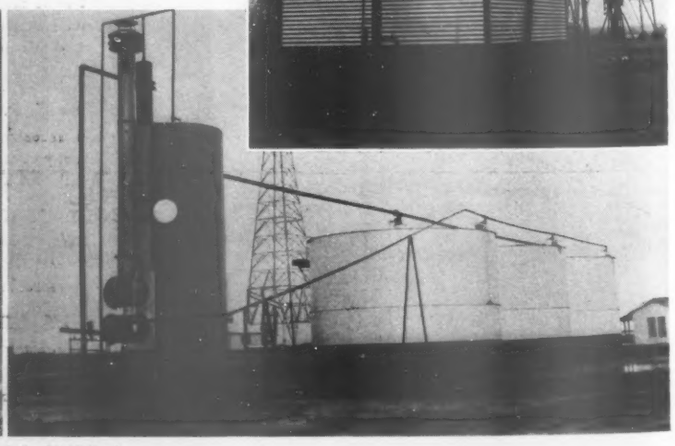
While no one system may be considered representative of the field, the flow-line type, preceded by a large free-water knockout either in the unit or in a separate tank is generally used. Usually the free-water knockout consists of a regular gun barrel or wash tank without an excelsior section.

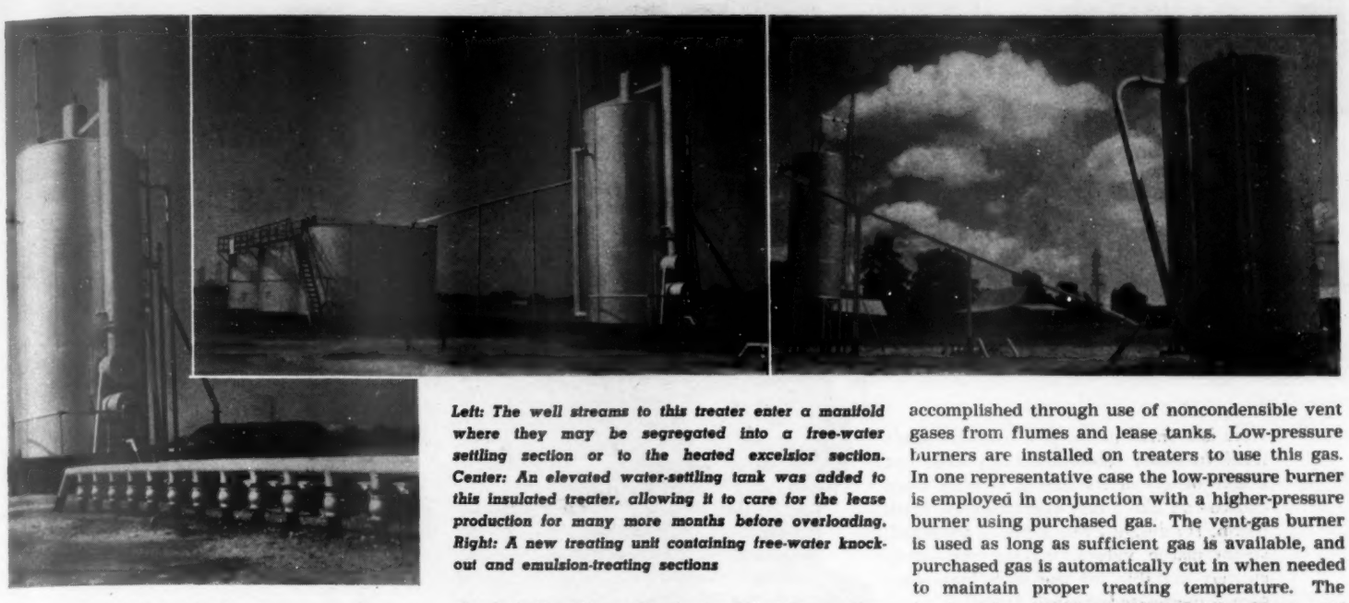
Particular stress is laid on separation of a maximum amount of water before emulsion treating is undertaken. Under good settling conditions and with a good break obtained with chemicals, from 50 to 80 per cent of the free water can be separated out at a temperature of 100° F. In summer, when crude temperature approximates 100° F., water



Right: This corrugated-iron building houses a treater and also provides shelter for tools, small equipment and lease supplies. Left below: Fuel costs make heat conservation important. In this unit, besides prewarming in the stack exchanger, incoming oil and water is heated in the horizontal exchanger, picking up heat from the salt-water stream leaving the treater. Right, below: Typical treating unit at Talco. Note the vent-gas line from the lease tanks, which picks up non-condensible gas for use in firing the heater







Left: The well streams to this treater enter a manifold where they may be segregated into a free-water settling section or to the heated excelsior section. Center: An elevated water-settling tank was added to this insulated treater, allowing it to care for the lease production for many more months before overloading. Right: A new treating unit containing free-water knockout and emulsion-treating sections

knockout is relatively simple. However, with lower winter temperatures, the necessity for either heating the gross mixture or handling more water in the treater adds to the problem of obtaining efficient separation.

By increasing the capacity and heat efficiency in the free-water separation stage, producers expect to meet increased water production without the need for adding to emulsion-treating equipment. In addition to the saving in equipment costs, better free-water separation will appreciably cut heating costs. In many fields where gas is readily available at little or no cost the fuel requirements for heating large volumes of water at a higher specific heat than oil do not enter the economy of treating. At Talco, however, heat conservation is a vital necessity.

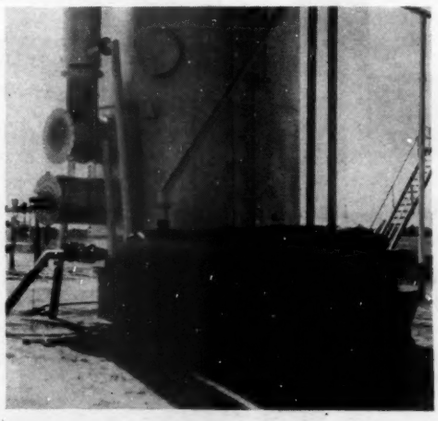
Dewatering before treating is handled in several different ways at Talco. One operator has fabricated a large tank by welding together two 10-ft.-diameter tanks to make a 31-ft. settling chamber. This wash tank, equipped with five baffles near the base, provides sufficient settling time to remove most of the salt water from the wells, so that the mixture to the treater contains only 4 to 8 per cent water. The unit serves a lease producing 260 bbl. of oil daily. Water separation ahead of the hay treater has served to relieve its load and this winter, although water knockout may not be as efficient, it will provide considerable saving in reduction of the volume of water to be heated to treating temperature. Chemical is added at the worst emulsion wells instead of at wells making most water, a practice finding general acceptance in the field. Thorough mixing before it reaches the water tank provides a clean break.

A specially designed treating unit is performing satisfactorily on another lease. The unit is tied into 13 wells whose lines meet in a common header so that production from wells making large quantites of water may be run to a water knockout chamber in the top of the unit, and oil with lower water percentage from the remaining wells is charged directly to the heater excelsior section. The two sections are incorporated in the same unit, one above the other. Of particular interest is the efficient heat transfer. In addition to prewarming incoming oil and water in a jacket surrounding the stack, the incoming streams at 110° (in summer) are preheated to 125°-130° by exchange with salt water from the heater.

In some cases oil-field boilers are used for preheating gross fluid before free-water knockout and in heating returned oil emulsion for separation in hay tanks. Preheating is not needed in summer, but bypassing the incoming stream through the boiler in winter results in better water separation at a lower temperature than required to break the emulsion.

In addition to preheating in stack and return-stream exchangers an important fuel saving is accomplished through use of noncondensible vent gases from flumes and lease tanks. Low-pressure burners are installed on treaters to use this gas. In one representative case the low-pressure burner is employed in conjunction with a higher-pressure burner using purchased gas. The vent-gas burner is used as long as sufficient gas is available, and purchased gas is automatically cut in when needed to maintain proper treating temperature. The treater takes 45 bbl. of oil hourly plus 35 per cent water, and requires only 1 gal. of chemical per 1,000 bbl. of oil.

In vent-line systems, high daytime temperatures in summer produce an excess of gas which is either pinched down or popped, and purchased gas is required occasionally at night. Such a vent-line system reduces purchased-gas requirements to one-sixth the former volume when purchased gas was used exclusively.



Greater salt-water separation capacity is needed to prevent overloading treaters and to conserve fuel costs in attaining treating temperatures. The large dewatering tank at the right was made from two 10-foot diameter, 16-ft. tanks

Preheating With Engine Exhaust

An experiment begun several months ago on one lease may find increased use in the field. The 6-in. engine exhaust line from a pumping unit was jacketed with 15 ft. of 12½-in. casing. The production of two wells, one making 6 per cent water and the other 30 per cent water was passed through this jacket on its way to the treater. In this buried exchanger a temperature rise of 17° F. is picked up. In winter the benefit is marked. The lowered viscosity of the warmed crude stream reduced line friction and relieved the load on the rods in the pumping wells. The temperature increase allows less gas expenditure in heating at the treater and more vent gas is given off at the gun barrel for use in place of purchased gas. A better chemical mix is also noted. Although this preheating method has not been generally adopted on the company's leases, in laying future lines, such jackets will be installed and the oil and water will be passed through them in series from wells to treaters.

Chemical requirements in Talco for a clean break vary from 1 qt. to 25 qt. per 1,000 bbl. of oil. As water percentage increases, the need for chemical decreases on some leases since added water gives a better wash in the dewatering stage. The chemical requirements also vary with treating temperatures, and in view of the expense of heating, chemicals are relied on to a greater extent than in similar fields which have cheaper fuel.

Although Talco crude contains free hydrogen sulfide, corrosion does not present a major problem in treating. A slight pressure is maintained on the closed-type treaters to prevent air breathing. In the few cases where corrosion occurred, tank bottoms have been replaced with concrete floors or cleaned and coated with an asphaltic enamel.

Rapid heat loss in treating units in windy or rainy winter weather is prevented by insulating all tanks. The equipping of tanks with expensive insulation has been tempered with a reduced margin of profitable operation recently. Cheapest insulation consists of tar paper nailed to a 2 by 4 wooden frame surrounding the tank.

TABLE 1—SALT-WATER PRODUCTION IN THE TALCO FIELD

	1938		1939		1940
	July	Oct.	Jan.	Apr.	July
Flowing wells making water	0	0	0	0	0
Pumping wells making water	430	455	473	480	573
Pumping wells not making water	220	214	196	195	139
Total pumping wells in field	650	669	669	675	712
Total wells making water	661	681	677	683	716
Daily water withdrawals (barrels per day)	19,789	23,205	27,524	26,341	22,398
Water (per cent total production)	41.5	48.5	47.0	44.3	48.0

Data from Texas Railroad Commission.

SMALL IN SIZE

but Tough as Nails!

Here is a small pump of a size that lends itself to many oil-field applications, but unlike others of its size, it is built from end-to-end like a big, high-pressure, slush pump. Its design even includes balanced, steam piston valves, making the pump entirely suitable for use with high-pressure, superheated steam.

FEATURES:

★ **One-piece, direct-flow, fluid end with individual valve pots; open-type construction with no internal walls subject to differential pressures.**

★ **Choice of five types of fluid valves; fluid pistons and rods (A.P.I. taper) to suit operating conditions.**

★ **Semi-steel or acid-resisting fluid-cylinder liners.**

★ **The entire steam end is a rigid, one-piece casting. It is equipped with balanced piston valves and is suitable for use with superheated steam at 350 lbs. per sq. in. pressure.**

★ **Fluid end is hydrostatically tested: discharge —1500 lbs. per sq. in.; suction—750 lbs. per sq. in.**

★ **Entire pump is given a running test before shipment.**

✳ "OILWELL" 6x4x6-B DUPLEX STEAM PUMP

Steam cylinder bore x stroke	(Inches)	6 x 6
Fluid liner sizes	(Inches)	4, 3½, 3
Maximum fluid working pressure	(Lbs./sq.in.)	800
Maximum steam working pressure	(Lbs./sq.in.)	350
U. S. Gallons per minute (theoretical) at:		
(1.) normal operating speed of 60 r.p.m.		75.5
(2.) maximum operating speed of 90 r.p.m.		113.4

"OILWELL" 10x4½x10 DUPLEX STEAM PUMP

A larger size for heavier work

Steam cylinder bore x stroke	(Inches)	10 x 10
Fluid liner sizes	(Inches)	4½, 4, 3½
Maximum fluid working pressure	(Lbs./sq.in.)	1000
Maximum steam working pressure	(Lbs./sq.in.)	350
U. S. Gallons per minute (theoretical) at:		
(1.) normal operating speed of 45 r.p.m.		117.5
(2.) maximum operating speed of 60 r.p.m.		156.7

OIL WELL SUPPLY COMPANY

EXECUTIVE OFFICE—DALLAS, TEXAS
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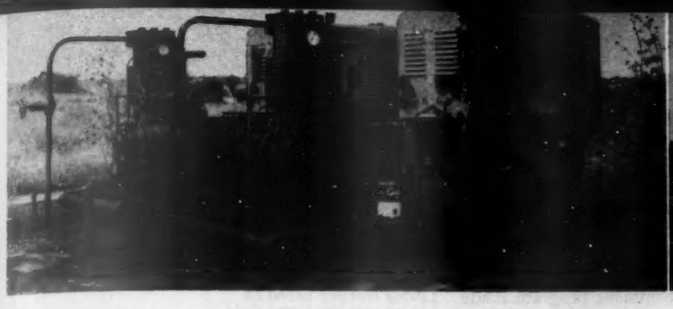
Branch Stores in all Oil Fields
United States Steel Corporation Subsidiary

DIVISION OFFICES—
OIL CITY, PENNA. DALLAS, TEXAS
LOS ANGELES, CALIF.



Three-cylinder pumps directly connected to multicylinder engines. These pumps supply high-pressure oil to a subsurface hydraulic pump

Typical tank-battery arrangement for hydraulic pumping. The high 500-bbl. tank retains sufficient clean oil to start the pumping cycle

Hydraulic Pumping Cost Data

Capacities Ranging From 174 To 3,190 Barrels Per Day

By DAN COX
Mechanical Engineer

PRODUCING oil from the Simpson dolomite in the Iglehart area of the St. Louis field (Greater Seminole) of Oklahoma is a question of how much water the producer is capable of handling. It constitutes a real proving ground for pumping equipment. A dead lift exceeding 3,000 ft., placing 10 bbl. of corrosive fluid in the settling tank, is necessary to net 1 bbl. of oil in the stock tank. Seven large Kobe hydraulic pumps have been effecting a wholesale transfer of water (and incidentally 10 per cent oil) from an average production depth of 4,132 ft. in sufficient quantity each 18½ days to equal the displacement of the Queen Elizabeth, world's largest passenger liner (85,000 tons).

No great importance was attached to the equipment engaged in the routine function of producing oil on this particular property until one of the units staged a single-handed attack upon the subterranean water supply, and shattered all records by lifting 310,080 bbl. of fluid in the short period of 136 days. With this fact in view, cost and performance figures compiled on this equipment might be of general interest.

A few reservations and a bit of admonition might not be amiss, and might serve in anticipating criticism born of misunderstanding. These figures appear as the result of a combination of: (1) The generous cooperation and license of a pioneer of the oil business, Dr. D. W. Ohern, coreceiver for T. C. Iglehart, Inc., and (2) a desire for more specific knowledge on the part of the author. The figures were not compiled in course of official research, but rather independently by one who had access to the necessary records. In no way do they reflect or suggest in the execution of the affairs of the corporation. The values themselves are not set up as criteria by means of which others should critically survey their own, but merely as figures passed on for whatever they may be worth.

Gooseneck used to streamline the power-oil input at the casing head of a well pumped by a hydraulic bottom-hole unit

Daniel Franklin Cox, whose education at Georgia Tech., California Tech., M.I.T. and Texas Tech. leading to a degree in mechanical engineering, has since been supplemented by 4 years of practical field experience. He spent 3 years in roughnecking on drilling rigs and in servicing drilling equipment. He has since been in charge of 11 hydraulic pumping units, and this afforded him the opportunity to compile the exact lifting-cost data contained in this article.

The cycle of operation of the hydraulic pumping system will not be strange to the readers of The Oil and Gas Journal; for those who wish to refresh their memory upon the system a bibliography is appended.

The period covered by the cost and production data to follow is 1 year, July 15, 1939, through July 15, 1940. The time studies were made over 38 consecutive weeks, October 29, 1939, through July 13, 1940. Development and consequent flush production are included within the period surveyed. Although the study begins with two wells, a comprehensive total of 86.6 producing-well months gives the figures a suitable perspective. As is thereby obvious, a continuous operation of 7.2 wells is simulated.

The following set of average production figures gives an idea of the volume of fluid being raised; these averages include the output of pumps whose capacities range from 174 to 3,190 bbl. per day.

AVERAGE PRODUCTION

	Per month per well (bbl.)	Per day per well (bbl.)
Fluid	41,849	1,396
Oil	3,868	129
Water	37,981	1,267

Overall water-oil ratio: 9.82 to 1.

Although limited to operating time (exclusive of down time) the above figures are not large by comparison with the output of the larger units. It is not unusual for pumps of the larger type to deliver fluid at the rate of 3,000 bbl. per day. The particular record-breaking pump to which reference has been made operated continuously for 136 days.

Before introducing cost figures it might be well to discuss briefly the accounting factors involved and to justify the limitations of this article. It is well understood by the writer that to arrive at a figure for the entire cost of producing oil it is necessary to include: (1) Amortization of capital investment. (2) Lease-rental expense and royalties. (3) Depreciation of equipment. (4) Depletion of natural oil reserves. (5) Production cost under which (*a*) general expense includes salaries of executives, legal advisor, technical advisor, general office expense, rent, taxes, insurance, and employes' benefits; (*b*) prospecting expense includes scouting, geology, geophysics, and leasing; (*c*) development expense includes initial cost of leases, easements, and cost of drilling and equipping wells; (*d*) lifting expense includes sums expended to keep the oil flowing into the stock tanks, i.e., attendant labor and materials for operating producing wells; (*e*) treating expense includes the cost of emulsion-breaking chemicals or heat and the maintenance of equipment for their application; (*f*) miscellaneous field expense includes all other expense incurred on or about the producing property such as lease roads, salt-water disposal, housing facilities, and utilities supplied to employes. This is, of course, only a skeleton of one particular conception of what constitutes the cost of producing oil; there are many variations in form; it is these variations that make critical comparison difficult.

In addition to the variation of figures brought about by differences in accounting methods, there are many influential physical factors which vary in every field, property, and even from one location to another; moreover, the ability, resourcefulness, and efficiency of the owners, executives, and their operating organizations have a definite effect upon these figures. In the case of the physical factors it is obvious that a barrel of oil in the stock tank costs less in being placed there if it flowed as the result of natural-reservoir pressure than it would have if it had been displaced through a dead lift of 3,000 ft. by mechanical means. But there are factors much less apparent to the casual observer which are, nevertheless, fully as important. Many of these factors affect the item "lifting expense," but for want of a more accurate one it has been

adopted arbitrarily as a representative cost figure for the purpose of comparison.

In this particular case the lifting expense has been found to be as follows:

Repairs	$32,821.68
Labor	12,616.67
Trucking	1,330.00
Tools and supplies	457.00
Fuel and lubricating oil	9,022.57
Total lifting expense	$56,247.92
Total barrels of fluid produced	3,624,170
Total barrels of oil produced	334,990
Lifting cost per barrel of fluid	$0.01552
Lifting cost per barrel of oil	.16791

Repairs to the pumps must be made in a shop equipped for work within very close tolerances, and by skilled workmen thoroughly trained in overhauling precision machinery. Consequently "repairs" consist mainly of expenditures for service of this nature; repairs to the triplex pumps and prime movers of the hydraulic cycle, or surface equipment, are included as well as replacements and repairs to the tubing-pulling equipment. "Labor" includes a man especially trained in the supervision of hydraulic pumping equipment, also pumpers, and members of the tubing-pulling crew. In the operation of this particular property certain economic aspects of the development program made it desirable to purchase gas for power rather than to use the natural supply from the wells; this policy was pursued at first as a temporary measure, but for reasons without bearing upon this study extended over the period thereof. Consequently the fuel item is unnecessarily excessive due to the impossibility of working out an equitable purchasing agreement.

Although the hydraulic pumping system has emerged from the experimental stage and has earned a place beside the best modern production equipment a great deal has not yet been written upon its economic aspects. Interest, therefore, is common in almost any cost figure dealing with the subject regardless of whether or not it has any accounting significance. With this in view, the following miscellaneous figures are presented:

MISCELLANEOUS COSTS

Lifting cost per month per well	$649.51
Lifting cost per barrel oil	.16791
Lifting cost per barrel fluid	.01552
Kobe maintenance cost per month per well	$287.08
Kobe maintenance cost per barrel oil	.07421
Kobe maintenance cost per barrel fluid	.00686
Eng. maintenance cost per month per unit	$46.98
Eng. maintenance cost per barrel oil	.02323
Eng. maintenance cost per barrel fluid	.00215
Triplex maintenance cost per month per unit	$12.37
Triplex maintenance cost per barrel oil	.00611
Triplex maintenance cost per barrel fluid	.00057

AVERAGE COST OF REPAIRING A PUMP

Size pump, in.—	
4 by 6 by 3	$299.93
4 by 4 by 2⅝	230.00
4 by 4 by 2	196.30
3 by 3 by 1¾	85.68
3 by 3 by 1½	68.58
2 by 2 by 1	50.20
2 by 2 by 1/2	29.97
Overall average pump repair	186.57
Ave. pulling jobs per month per well	0.96
Ave. days between pump repairs	32.46
Ave. barrels of fluid raised per pump repair	45,303
Ave. barrels of oil raised per pump repair	4,188
Ave. barrels of water raised per pump repair	41,115
Attendant man-hours per day per well for adequate observation	5½
Ave. man-hours required to replace pump	40

Since the prime movers used are of the high-speed type an entirely new form of pumper's daily report book was developed to meet the need of more specific and detailed information for the mechanic and hydraulic-equipment supervisor. Utilizing the information carried upon these daily reports, the following interesting time study has been made:

	Per cent
Normal pumping operation	57.0
Other than normal pumping operation	30.8
Down time	12.2
	100.0

"Normal pumping operation" is self-explanatory. "Other than normal pumping operation" includes all operation at partial capacity or efficiency. For example, one of two ground units shut down for a periodical checkup or minor adjustment; or operation continuing at fractional capacity allowing the salt-water disposal system to catch up with production. In fact it was found to consist of such a wide variety of causes resolving themselves into no consistent classifications that little of noteworthy interest was realized from a detailed study of that 30.8 per cent of the production period. Interesting information was, however, derived from a breakdown of the 12.2 per cent constituting "down time."

ANALYSIS OF DOWN TIME

	Fractional part of Down time alone (%)	Fractional part of Entire prod. period (%)
Due to causes not generally prepared for, viz., credit limitations, inadequate gas supply, replacement equipment not available, etc.	48.4	5.9
Due to subsurface-pump failure and consequent pulling and replacing pump	18.6	2.3
Due to surface, or power unit, repairs	14.1	1.7
Due to equipment other than subsurface pump and power unit, viz., split or leaking tubing, tank battery, flow line, disposal system, etc.	11.9	1.4
Due to modification of installation, i.e., changing from insert to casing-type pumping, replacing rings on packer, etc.	7.0	.9
	100.0	12.2

For whatever purpose they may serve, the above are figures of as nearly empirical derivative as is possible to obtain; factors for the unexpected are hardly necessary as the economic forces governing these figures have been exposed to the storms of uncertainty compatable with the production of oil upon the scale of the small independent.

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SAFETY — Wire-Mesh Guards Prevent Accidents

GUARDS used for covering the V-belts, pulleys, clutches, and yokes on the hookup on a rotary rig are a necessity if serious accidents are to be avoided. It is often necessary for a man to climb over this equipment while compounding or disconnecting the engines or oiling and greasing the bearings.

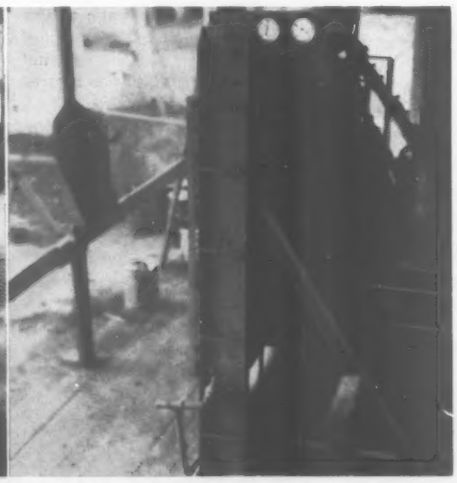
The guards should be easily removed and easily replaced as it is often necessary to make some adjustment or effect some repair. Wire mesh makes particularly suitable guards as it is light in weight and in addition allows a casual inspection without removal of the guard and also permits excellent ventilation around the equipment.

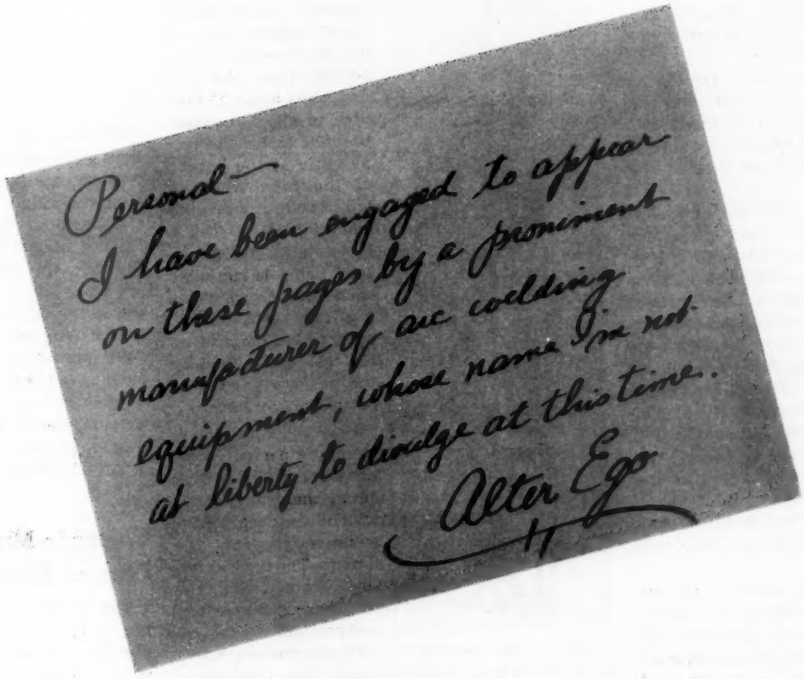
Satisfactory service of machinery depends on the attention given it and particularly on the regularity with which it is lubricated. Guards should be constructed with this in mind as it is hazardous for a man to reach through a small hole and feel for an oil cup or a grease connection. Many points on a rig require lubrication once each tour and this is done while the rig is shut down and the driller is at his post but other points must be lubricated hourly, or at some specified period, while the machinery is in motion.

One of the accompanying photographs shows a motorman removing a portion of the guard so he can oil the clutch mechanism. By removing the entire top of the guard the oiling can be easily accomplished and the mesh admits enough light to permit the workman to see exactly what he is doing. In the right foreground can be seen handles on the guard covering the reversible clutch; the guards are built so one-half is hinged and can be opened like a door.

Attention to detail and the guarding of any spot which may be a danger point is an effective method of eliminating the causes of accidents. While normally a person is expected to keep his hands out of the radiator fan on an engine, there are a number of ways in which he can accidentally get them in there. When delivered from the factory, these engines have guards which are suitable for most installations and are also equipped with side and top covers. For summer operation the sides and top are removed thus uncovering the fan and exposing it.

By making a guard from sucker rods and steel mesh, the danger of a man accidentally coming in contact with it is eliminated. It also protects the fan from damage due to a workman thrusting into it any unwieldy objects.




Personal—
I have been engaged to appear
on these pages by a prominent
manufacturer of arc welding
equipment, whose name I'm not
at liberty to divulge at this time.
Alter Ego

Procedure for Cleaning Slotted Liners Developed in California

By T. P. SANDERS

IN areas where wells are completed with slotted liners the most prevalent production problem is often that of keeping the slots open so that production will not be restricted. On new wells the problem is seldom present, but as the wells age many of the slots become more or less permanently clogged so that washing or swabbing operations fail to remove the material lodged in or about these slots. Thus while the washing, swabbing and bailing work carried on at regular intervals is infinitely helpful in removing the less tenacious substances from the slots, there comes a time when more positive measures are necessary.

Until recently positive measures for remedying clogged liners included only reperforation or replacement. However, a recently introduced procedure has shown conspicuous success on many of the 180 wells on which it has been used in the California fields.

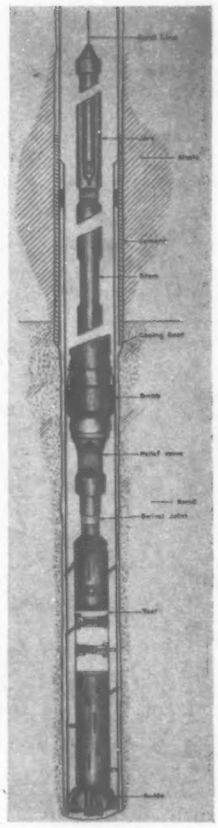
In its most modern application the new slot-cleaning method combines both mechanical and hydraulic action. A patented tool, pictured in Fig. 1, is fitted with a series of narrow blades which are supported from behind by coil springs. The springs control the thrusting pressure of the blades. Being free to tilt upward or downward, or to retract directly back into their bases, the blades are able to slide in folded position inside of the liner. Each time a blade comes into alignment with a slot in the liner, it is thrust through the slot, penetrating to an average depth of 1¼ or 1½ in. beyond the ouside diameter of the liner. The design of the blades causes the tool to rotate very slowly as it is worked up and down, and a swivel joint at the top prevents this turning from being carried into the sand line.

In order to obtain a washing action to aid the blades in cleaning the slots, a swab is run immediately above the mechanical tool. Since the use of a swab in the California fields is often considered dangerous because it may draw too much sand into the well, a type of swab is used which makes use of a relief valve to limit the amount of suction that can be placed on the sand.

The tool and swab can be run either on tubing or on a sand line. In all cases it is considered advisable to run jars above the swab to assure removal of the equipment if the tool should become stuck in the liner. (To date there have been no cases in which the jars have proved necessary.) In order to prevent the jars from working during the normal slot-cleaning operations, it is necessary to use a stem below the jars. It has been found that sufficient weight is obtained with a 2½-in. by 30-ft. stem. This, of course, is installed above the tool and swab so that it will not prevent running the tool to bottom.

Method of Operation

The tool, with accompanying swab, stem and jars, is lowered to the bottom of the liner and is worked up and down in short strokes, gradually progressing toward the top of the liner and thereby keeping above the sediment coming into the liner after the blades have cleaned the slots. The up-and-down movement is carried on as slowly as possible so that the blades will have time to penetrate to their full depth. On the average the tool will clean about 25 ft. of liner per hour.



Assembly used for cleaning slotted liners using new-type tool supplemented by a swab in order to combine mechanical and hydraulic cleaning action

After the tool has been worked upward to the top of the liner, the operator removes the tool assembly from the hole and waits about 15 minutes to allow sediment brought in by cleaning to settle at the bottom of the hole, where it will not interfere with operation of the tool. A hydrostatic bailer or sand pump is run after each few hours of cleaning. This keeps the hole open to bottom so that the tool is able to clean the perforations to the bottom of the liner.

For cleaning liners having round holes there is a different type of mechanical cleaner which has sharp prongs mounted on leaf-type springs. The thrust pressure is controlled by the number of spring leaves.

When liners are cemented, either for shutting off intermediate water or for closing the space between liner and casing shoe, some of the slots or perforations are usually blocked by cement. Using the mechanical cleaner, cement can be removed from the slots even after it has set, provided that no appreciable amount of slurry has been forced outside of the liner.

Results Obtained

Remarkable increases have been obtained on some California wells with the mechanical perforation cleaner. On other wells, however, no changes have resulted because the liner was not clogged beforehand to a point where it would restrict production. On old wells where production is small it is usually impossible before running the mechanical cleaner, to determine whether the low productivity is due to reservoir conditions or to a clogged liner. If the cleaner is run without bringing about an increase in production, it is then known that it is the reservoir sand that is restricting passage of fluid rather than the liner. This knowledge is of value if further restorative measures are to be attempted.

In the Lakeview area of the San Joaquin Valley it has been verified that a typical well which had been producing 24 bbl. of oil per day was increased to a steady producing rate of 61 bbl. per day through mechanical cleaning of the slotted liner. Similarly, a well in the Maricopa district was increased from 25 to 65 bbl., representing a 260 per cent increase. In the Taft district, oil-company records shows a 110 per cent increase on a typical well.

In the Wilmington field the mechanical slot cleaner has achieved its most conspicuous success, for here the sand problem in pumping wells is most severe. Under normal operation most of the slots become closed while a few remain open indefinitely. Since there is a rush of fluid through the few open holes during pumping, the high velocity carries sand in large volumes into the hole. The effect of this sand is so great that it is not unusual for some wells to require pulling once a week. By opening all the slots in the liner with the mechanical cleaner, and by keeping them open through subsequent applications, the sand troubles have been reduced to such an extent that some wells formerly troublesome are able to pump for several months without well servicing.

It has been found that in some cases liners are clogged almost completely during completion of the well. One Wilmington well surprised its owners by refusing to flow after its completion, although it was located among other flowing wells. It was pumped for 6 months at a small but steady daily production. Finally the slotted liner was given a thorough cleaning with the patented mechanical tool supplemented by a swab. During cleaning operations the well started to flow at the rate of 100 bbl. per day and flow continued with a normal rate of decline.

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Colorado Mines Issue Discusses Factors Affecting Marketing

The Quarterly of the Colorado School of Mines has recently published, Volume 35, No. 3. This number contains a discussion by Harry W. Chinn of "Some Factors That Affect the Marketing of Petroleum Products and an Investigation of the Effect of Railroad Tariffs Upon Marketing Areas." Included are 11 plates which show graphic variations in gasoline consumption and price zones for Parco and Casper, Wyo.; Pittsburgh and Philadelphia, Pa.; New York Bay; St. Louis, Mo.; Chicago; Houston and El Paso, Tex.; Shreveport, La.; Los Angeles and San Francisco, Calif.; Seattle, Wash.; and Shelby, Mont.

Tables are also included dealing with such phases of the subject as tariffs, gasoline consumption, and gasoline taxes. Copies of the Quarterly may be had from the Department of Publications, Colorado School of Mines, Golden, for 50 cents.

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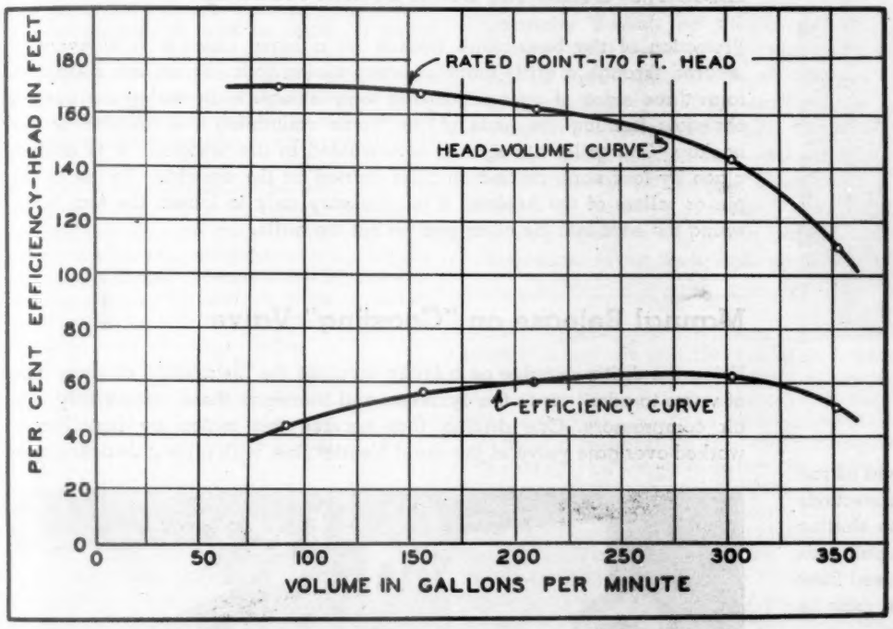
Refractories Investigation

A 20-page booklet "Refractories Investigation in Mellon Institute" has been recently published by Mellon Institute of Industrial Research, University of Pittsburgh, Pittsburgh, Pa. A history of the refractories fellowship and its activities is given and testing work and facilities of the fellowship are described. Following are some of the researches that have been made: Chemical and physical properties of clays, effect of red hearts in fire-brick clay, and checker brick for resisting alkaline slags. Copies may be obtained gratis from the institute.

Cost of Centrifugal-Pump Power Cut by Checkup

CENTRIFUGAL pumps, normally efficient and economical in services for which they are suited, can become the worst kind of "power hogs" if their pressure and volume characteristics are not correct for the service in which they are placed, and if they are not kept in good operating condition. Worse still, such a pump may be performing its duties perfectly, with no hint of wasted power until a check is made. Then it may become apparent that a little repair work or perhaps a different pump will save many dollars and cents in power costs.

A simple case in point was in the operation of a small water pump which supplied water to the flue-gas scrubber of a catalytic polymerization unit. Although the scrubber was receiving plenty of water and operating satisfactorily, a checkup disclosed that a large amount of power was being wasted. Power losses were from two sources.



Characteristic curve showing performance of the centrifugal pump, rated at a head of 170 ft. and motor-driven at an average speed of 1,750 r.p.m.

The characteristic curves for this pump are shown in the figure, and as noted the pump was rated at a head of 170 ft. However, the maximum discharge pressure required to supply water to the scrubber was only 65 ft. Thus in order to prevent overloading the motor it was necessary to pinch down on the discharge valve to limit the quantity of water pumped, thereby reducing the load. This resulted in a relatively large power loss due to the pressure loss across the discharge valve.

In addition to this loss there was another serious loss resulting from leaking past the worn seal rings of the pump. This leakage amounted to about 100 g.p.m., and this added to the amount that was reaching the scrubber made the load on the pump equal to 275 g.p.m.

The net result of these two conditions was that the motor drew power for pumping 275 g.p.m. against a head of 150 ft., while the actual amount of water received at the scrubber was only 175 g.p.m. and the actual necessary head was only 65 ft. Simple calculations showed that the power input to the motor was 16.3 kw., and that a properly rated pump in good condition would require only about 4.5 kw. Accordingly a pump rated 175 g.p.m. at 65-ft. head was installed, and has given perfect service since.

The monetary saving, figured on a basis of 90 per cent operating time with power costs at 6 mills per kw. hr., amounted to $560 per year, enough to pay for the new installation in less than a year with clear savings of $560 per year thereafter.

It should be borne in mind that this saving was made on a very small pump, and the larger the pump the larger the savings realized from such corrections. It a recent case of several plunger pumps operated in parallel with a centrifugal pump to charge a group of cracking stills, a power saving of over $8,000 per year was realized merely by reducing the pressure loss through exchangers and control valves, and by having the operators hold the discharge pressure to the minimum required.

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Questions and Answers

We have a well in the Mississippi chat at approximately 2,400 ft. The well produced 800 bbl. per day before the water appeared. Casing had been cemented by a standard method and was recemented with 150 sacks around the 7-in. pipe. The well continued to pump excessive water and is now being checked for a leak in the casing, although the water may be coming from below the pay. The chat was topped at 2,414 ft. and was drilled to 2,420 ft. with the top portion showing the most oil; probably the lower 3 or 4 ft. may not produce oil and we are considering plugging it back with lead. Have you any suggestion of an alternative procedure or any method which would insure the success of this job?—J. L. H., Kansas City.

If the well has not been electrically surveyed, it would probably be well to have this done before any remedial work is attempted. This will show the source of the salt water, whether above or below the casing point, and will also indicate the procedure to be followed.

If the leak is above the casing point or the water is coming in around the casing at the bottom, it can be shut off by a squeeze job. In case a simple squeeze job does not suffice, a multiple-batch job can be run and a shutoff assured.

There are several methods of shutting off bottom-hole water and the use of lead wool is one of them. However, this method has several disadvantages, the main one being a lack of a complete shutoff and the fact that once the lead wool is in the hole it is hard to remove.

The method most commonly used today for sealing off bottom-hole water is by cementing. The recent introduction of a quick-setting gypsum cement, which expands on setting, has been very helpful in this type job. The product is handled in the regular manner, although care must be taken to place it promptly to prevent its setting.

An interesting development in the shutting off of bottom-hole water was described by J. N. Miles, Cities Service Oil Co., before the 1940 spring meeting of the A.P.I. at Wichita, Kans. This paper was published in The Oil and Gas Journal, March 21, 1940, The procedure calls for an acid treatment of the water-bearing lime before cement is placed.

In this method, tubing is run in the hole with the bottom two joints welded together and the bottom joint having a seat for a jet gun. The well is then filled with fresh water and the rate at which the formation is taking water determined and from this the amount of acid to be used decided. From 500 to 1,000 gal. of 15 per cent acid is run in slowly to keep the zone of reaction close to the water-bearing horizon.

Fluid in the well is then allowed to recede to its static level and the cement (about 15 sacks in 16-lb. slurry) is placed in the tubing and displaced by fresh water, about 30 minutes generally being allowed for this part of the procedure. All of the cement is displaced from the tubing, leaving the water level inside the tubing in balance with the column in the annular space. The purpose of the slow displacement is to prevent a large buildup of water and cement outside of the tubing which would increase the possibility of sticking the tubing or plugging off the productive zone.

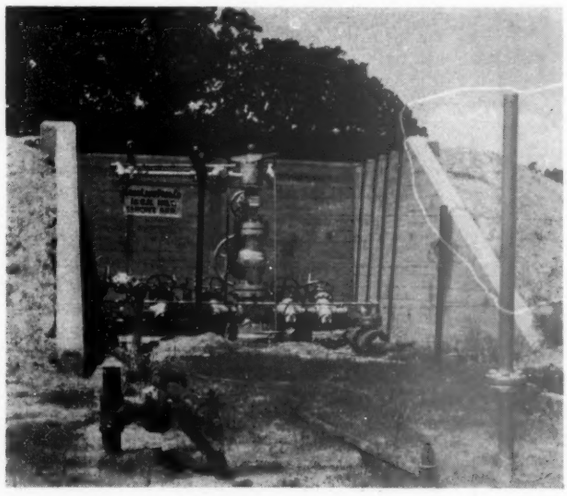
If the fluid does not return to its static level, or its rate of drop is small, a successful job is indicated. As soon as the cement has been displaced, a flat-bottomed weight is run on wire line to determine the height of the plug in the well; excess cement is circulated out of the well if, after waiting 3 hours, it is found to be higher than intended. The face of the producing zone is cleaned with water and a jet gun, and if this fails, small amounts of acid can be used and the amount increased as necessary. In case the first attempt to shut off fails, a second batch of cement can be run after 3 hours has elapsed since running the first batch.

Mr. Miles pointed out that a 16-lb. slurry is best, as it has a minimum shrinkage. Also that multiple small batches are better than one large batch of cement as this reduces the hazard of cementing off the productive zone and plugging the tubing or cementing it in the well. A hard strata at the base of the zone will also aid in the success of the job.

Operating Ideas

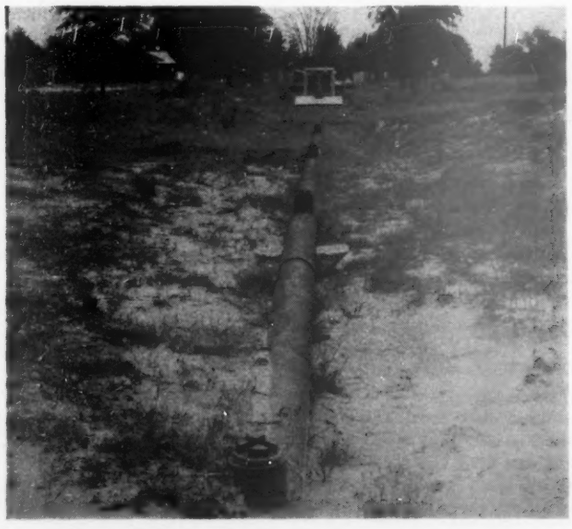
Protection for Recycling Well

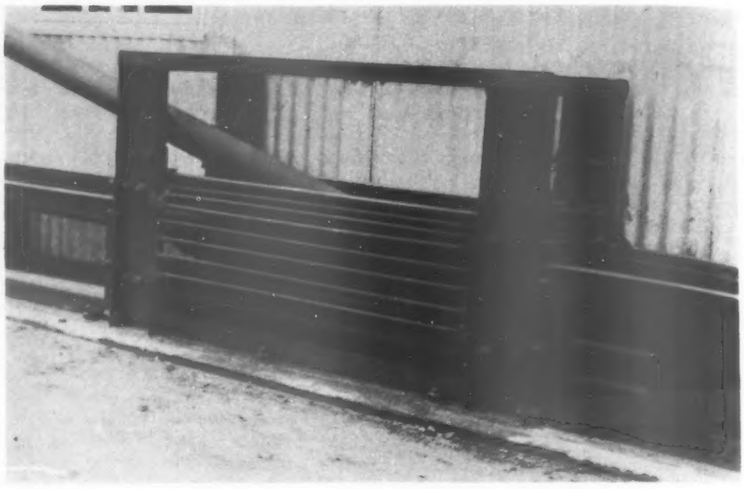
Where the well chosen for recycling gas to the formation lies close to a main-line railroad, protection of the well against possible damage from a derailment or automotive vehicle struck by a train at a nearby crossing is afforded by building a heavy concrete enclosure around three sides of the well, and by banking earth high against this wall to reinforce the protection of the well. Such a structure also protects the railroad property in case of blowout at the well or in any of the high-pressure lines leading thereto. Additional protection is secured by a grille of heavy I-beams spaced closely over the well and carried on the two walls of enclosure which are parallel.



Rod Lines Enclosed in Casing

In the East Texas field one company has enclosed its rod lines in 6-in. reclaimed casing with inspection connections at each joint. Experience has shown that due to shifting sands, this practice has cut down wear on the pull rods as much as 50 per cent. One of the casing-enclosed lines is shown here; and as may be seen, the plugs may be easily removed from the inspection connections.



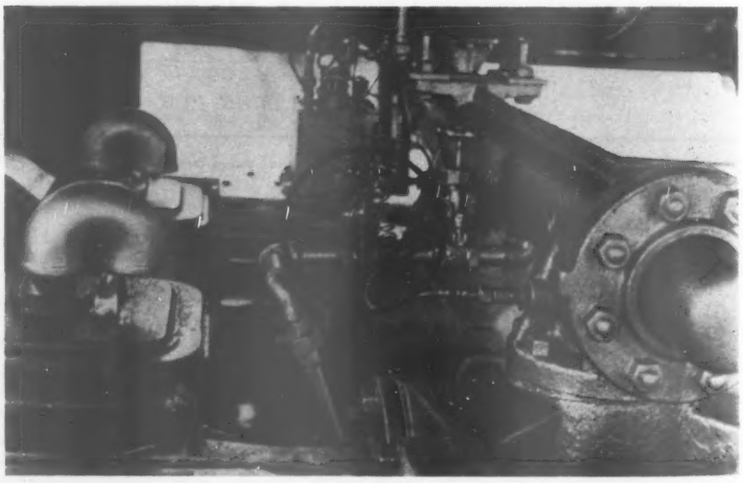


Effective Grille for Back-Crank Hookup

Protection of the back-crank hookup on a lease close to a highway is secured through a grille made of scrap sucker rods. These are welded to form three sides of an octagon and long enough to fit within the upright channels forming the ends of the frame containing the traveler or the hookup. The grille fits against lugs welded to the uprights. It is held in place by four ears, carried on bolts carried on the uprights. To get at the pin or rollers of the hookup, it is necessary only to loosen the four bolts, swing the ears into the clear and lift out the grille.

Manual Release on "Coasting" Valve

Using the drilling engine as a brake involves the installation of some type of valve to admit air to the cylinders and transform them, temporarily, into air compressors. One drilling firm secures this action by installing a worked-over gate valve in the usual bleeder line, with a positive-action gate



between this fixture and the manifold to provide protection in case of equipment failure. The worked-over gate is filed or turned down to remove the threads on the stem, and allow the gate to be closed by a direct pull on the handwheel. By means of a wire, pulleys and lever at the driller's stand, this opening of the valve may be performed from a distance and air thus admitted to the manifold when steam is cut off. A weight, tied below the air line and suspended from the worked-over gate handwheel, insures closing of the valve when the lever is moved back to the closed position.

Safety Attitude of Oil Industry Resulting in Fewer Accidents

By HARRY F. SIMONS

Safety is something that must be developed as it cannot be purchased. During the past 12 years, the petroleum industry has become increasingly more accident-prevention conscious. At first, efforts in this direction were rewarded with large gains but in recent years it has become increasingly difficult to obtain a substantial reduction. Costs for accidental injuries vary from $50 per year per employe in a fairly large company having no drilling department to $300 per year per employe in drilling organizations with an average of approximately $150 per employe per year for the more than 600,000 workers in the petroleum industry—a total bill of $90,000,000. The slogan "Eternal Vigilance Is the Price of Safety" may be rank plagiarism but it can pay great dividends to workers and employers.

DURING the past several years accident-prevention work in the petroleum industry has shown slight gains, and this condition is causing safety directors, employers and employes some concern. A rapid decline in the number of accidents as shown by the accompanying accident-experience chart (Fig. 1) and the number of workers to each disabling injury (Fig. 2) was registered from 1926 to 1931. Since then there have been only slight decreases on the manufacturing and production-division charts with small gains for the industry as a whole, although 1939 marked an all-time low in the number and severity of accidents in the oil business. A glance at the accident-frequency chart (Fig. 3) shows a decrease in 1939 and a small decrease for the first 6 months in 1940. Two of these charts are not for the industry as a whole but are taken from two companies having a slightly lower accident rate than the average. The third chart is for all petroleum departments reporting to the A.P.I. Department of Accident Prevention for period 1927 to 1939.

There are two main reasons for the reduction of accidents during 1926 to 1931 period: Introduction of safety regulations by the states and companies, and the fostering of prevention work by the companies. The finding of ways to further reduce the accident rate is a difficult job which is meriting the attention of safety directors of large companies and small employers and employes.

Injury to an employe while at work frequently

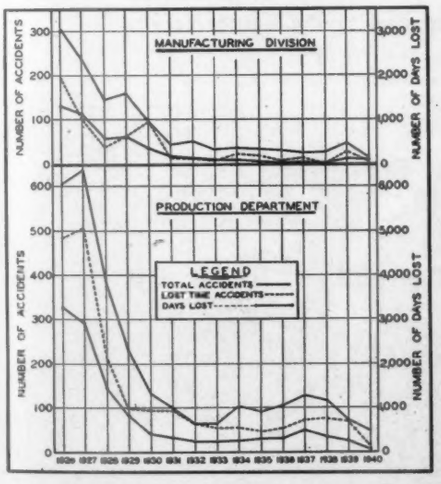


Fig. 1—Accident-experience chart of two oil companies over the past 12 years showing the decline in number of accidents

costs the employer as much, or more, than it does the injured man. The employe loses the difference between his anticipated pay and the compensation he received, or, as in some cases, his pay continues. The employer suffers through time lost in replacing the injured man, book work, the risk of hiring an incompetent man who is likely to be injured or who will cause delay because of his inexperience, and, most important, a probable increase in his insurance premiums and disability payments. One contractor figured that an accident, and not a particularly severe one, cost him $15,000 in 2 years, due to increased premiums. Table 1 shows the direct charges for accidental injuries of one fairly large oil company having no drilling department.

Writers of compensation insurance and employer's liability base the costs of their insurance on the frequency and the severity of the accidents of the operator seeking the policy over a certain definite period immediately preceding his application. The period considered is generally from 2 to 3 years. From the base rate, which differs according to the state in which the employer is operating because of the variation in compensation laws, there is computed his individual premium.

Experience-Rating Credit

This experience-rating credit is much sought after by some contractors and operators as it may reach a total discount of 50 per cent from the base rate. The average base rate for 3 oil-producing states as given by one insurance company is $10.28 per $100 labor bill for the drilling department. Roughly there is 10 per cent added to the labor cost of the well for insurance. Cutting the insurance costs by 50 per cent on an operation requiring a labor bill of $36,000 would amount to a saving of $1,800. On the other hand the operator can lose this much through a hike in his insurance if he has reported too many injuries. Insurance rates often reach $20 per $100 labor where a contractor or firm has a bad experience rating.

One contractor operating in three Mid-Continent states, in his efforts to increase his experience-rating credit paid bonuses to the drillers for each completed well on which they had no injuries to members of their crews. This bonus money was generally split up among the members of the crew by the driller. At the end of 2 years' time the contractor had achieved one of the largest experience-rating credits in the area in which he operated and his men were well satisfied with their bonus earnings and had at the same time developed a careful attitude toward their work. There was no sacrifice of speed in completion of the wells during this time.

Causes of Accidents

A recent survey of industrial accidents made by insurance companies tabulated the cause of accidents in the following manner: Unavoidable, 2 per cent; physical hazards, 10 per cent; supervisory causes, 88 per cent. From the viewpoint of insurance companies this is illuminating for if all physical hazards were eliminated there would still be a large number of accidents due to the mental attitude of employer and employe.

Company safety engineers do not agree with these figures as they delve deeper into the subject and break it down further. They are also not so prone to lump accidents under the all-inclusive "supervisory causes."

The following is the way one company breaks down the 66 per cent of its accidents for which it can directly find the cause: Performing work in a

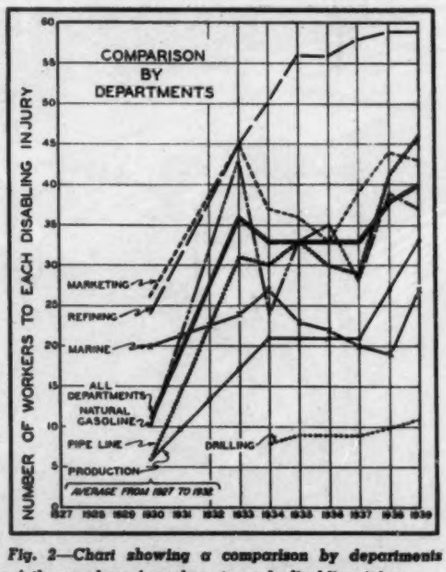


Fig. 2—Chart showing a comparison by departments of the number of workers to each disabling injury

mechanical manner, 20.2 per cent; poor judgment on part of injured, 16.0 per cent; unsuitable methods, 8.5 per cent; rain, wind, snow, sleet, and natural causes, 7.9 per cent; lack of protective devices or guards, 7.3 per cent; defective tools, 5.8 per cent. It is worth noting that unsuitable methods, defective tools and lack of guards or protective devices account for 21.6 per cent of the accidents while 36.2 per cent can be laid to the worker's fault.

A study of the accidents to determine the part of the body most likely to be injured shows that fingers account for 22.8 per cent of the lost-time injuries, eyes account for 17.5 per cent, hands account for 7.9 per cent, feet for 4.3 per cent, toes for 4.2 per cent and the face for 3.5 per cent. In

(Continued on Page 49)

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NON-CORROSIVE CONDITIONS

CHEMICAL PROPERTIES

	Carbon	Manganese	Phos. (Max.)	Sulphur (Max.)
Grade 14	.35 – .45	.75 – 1.10	.045	.055
Grade 30	.35 – .45	.75 – 1.10	.045	.055
Grade 40	.30 – .40	1.10 – 1.40	.04	.05
Grade 50	.30 – .40	1.60 – 1.90	.04	.05

PHYSICAL PROPERTIES

Grade	Heat Treatment	Yield Point P.S.I.	Ultimate Strength P.S.I.	Elong. 2" %	Elong. 8" %	Reduction %	Brinell	Impact Izod Ft. Lbs.
14	Not Normalized	45000/55000	80000/90000	.....	17–22	45–55	170–207	20–47
30	Fully Normalized	50000/60000	80000/90000	32–38	19–24	50–60	155–180	50–75
40	Fully Normalized	60000/70000	95000/105000	28–35	19–23	50–65	180–205	60–85
50	Fully Normalized	70000/80000	105000/120000	30–37	17–22	55–70	200–225	55–85

ENDURANCE LIMITS

Pounds per Square Inch

Grade	Air	Salt Water	Hydrogen Sulphide
14	40000	.....	.....
30	45000	24000	10000
40	53000	22000	16000
50	56000	29000	12000

CORROSIVE AND SULPHIDE CONDITIONS

CHEMICAL PROPERTIES

Grade	Carbon	Manganese	Phos. (Max.)	Sulphur (Max.)	Nickel	Moly	Chromium
71	.28 – .33	.50 – .80	.04	.05	1.00 – 1.50	.....	.45 – .75
81	.20 – .25	.40 – .70	.04	.05	1.65 – 2.00	.20 – .30	.....
91	.14 – .19	.40 – .60	.04	.05	3.25 – 3.75	.20 – .30	.....

PHYSICAL PROPERTIES

Grade	Heat Treatment	Yield Point P.S.I.	Ultimate Strength P.S.I.	Elong. 2" %	Elong. 8" %	Reduction %	Brinell	Impact Izod Ft. Lbs.
71	Fully Normalized & Fully Tempered	60000/70000	85000/100000	32–40	17–22	58–68	180–205	70– 85
81	Fully Normalized & Fully Tempered	65000/75000	85000/ 95000	33–40	18–24	60–70	180–205	85–105
91	Fully Normalized & Fully Tempered	70000/80000	85000/ 95000	35–43	19–23	65–75	185–205	95–107

ENDURANCE LIMITS

Pounds per Square Inch

Grade	Air	Salt Water	Hydrogen Sulphide
71	53000	30000	18000
81	53000	33000	22000
91	60000	37400	23400

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TABLE 1—ACCIDENT-EXPERIENCE AND COMPENSATION COST

Year	Average number employes	Man-hours	Pay roll	Accidents: All	Accidents: Lost time	Days lost	Own risk compensation cost	Compensation insurance premiums	Total cost	Frequency rate	Severity rate	Cost $100 pay roll
1938	716	1,477,000	$1,279,398	114	35	757	$1,779.68	$35,215.90	$36,995.58	23.69	.512	2.891
1937	751	1,563,730	1,303,522	129	49	720	3,946.10	39,266.70	42,706.75	31.65	.460	3.276
1936	686	1,629,305	1,077,995	104	31	519	712.64	39,837.04	40,549.68	19.03	.319	3.761
1935	591	1,192,142	895,178	90	30	461	255.00	34,527.30	34,809.30	25.1648	.3867	3.889
1934	587	1,096,680	316,379	103	26	549	.....	31,087.00	.....	23.71	.5006	3.81
1933	481	1,242,177	615,414	65	24	549	.....	23,864.00	23,864.00	19.321	.442	3.878
1932	451	1,422,913	607,239	65	25	638	2,658.00	10,311.00	12,969.00	17.57	.4483	2,136
1931	487	1,453,475	672,959	100	33	943	8,100.00	7,485.00	15,585.00	22.70	.6487	2.316

other words, 60 per cent of the lost-time accidents are due to an injury of the extremities or the face.

Six main types of injuries account for 93 per cent of the lost-time cases. Contusions account for 30.2 per cent of the cases, lacerations for 25.6 per cent, foreign bodies for 18.9 per cent, fractures for 7.3 per cent, amputations for 6.2 per cent and sprains for 5.1 per cent. The above figures were based on an analysis of 3 years' record.

The study of over 700 disabling cases in one company reveals an average cost of $460 per case, while more than 2,200 nondisabling cases cost the company $6.50 each. This is for a producing company which operates some drilling rigs and its accident costs can be expected to be lower than a company having a proportionately large number of drilling rigs or lower than a drilling contractor.

One turn this takes where the insurance company is involved is the inspection of machinery and personnel before writing a risk. They have found that low wages and unsatisfactory working conditions make a risk undesirable and the premium rates go up accordingly. This particularly involves the insistence on the part of superintendents and foremen that their men use the safety equipment provided. In a great many cases the insurance companies found that men in a supervisory capacity were aware that their men were not using the prevention devices available and had ignored the situation, with fatal results.

Proper Mental Attitude Needed

As long as heavy machinery is being moved and installed, frequently under mental pressure and physical danger, there will be a certain number of accidents. However, employers, insurance companies and some employes feel that through the development of the proper mental attitude on the part of the men, the number of accidents due to supervisory causes can be substantially lowered. The men in immediate charge of workers have developed a rather definite attitude toward the "unsafe" worker and the new man, the "weevil." This seems to be particularly true of the drilling crews where not only the driller but the members of the crew take pains to instruct the novice. Their motive may be selfish as they will in a great many cases point out that they are "looking after their own neck" when they take time to instruct a new man just why he should not stand in a particular spot, why he should not do a certain thing, or why he should perform a task in a certain manner.

Lazy, careless, and high-tempered men are also being avoided. The latter cause seldom appears on the accident report, but it is the underlying cause of a great many accidents, according to drillers, gang pushers and safety directors. One driller reported that his derrick man became angry when he failed to latch the elevators on a stand of drill pipe and on the next try the derrick man held on to the deadline so long, in his effort to swing the traveling block properly, that he lost a finger. Inability to accomplish some task occasionally causes a fit of temper which results in the throwing of a bar, wrench, or some hand tool to the subsequent detriment of a fellow worker. One safety director reported seeing a man attack a large running compressor with a 14-lb sledge hammer during a fit of anger.

In contrast to the system of paying bonuses for no injuries is the practice of penalizing employes who are careless and who either injure themselves or a fellow workman. These penalties take the form of layoffs in minor cases, but for flagrant and persistent violations of safety rules, dismissal is considered necessary. By studying the result of accident-prevention work in the larger companies it is found that those following this plan have been very successful in substantially reducing their accident rate while at the same time "accident consciousness" was developed.

There is wide divergence of opinion among safety directors on this matter. The payment of bonuses, while workable among small groups, is thought by some as being inadvisable for the larger organizations. The establishment of penalties for injuries in companies where the employe receives both medical attention and his regular wage while not working as a result of injury is considered as advisable by some safety directors and as too severe by others. One company studies the particular accident and if the employe was at fault he receives only the compensation required by law; if the injury could not have been avoided by the employe, he receives from the company the difference between his regular wage and the compensation payment. Some safety men point out that while the physical suffering involved is some deterrent, the mental anguish caused by a direct financial loss to the employe is much more effective as a preventive measure.

Direct dismissal of the employe is thought by most operators and drilling contractors to be a little severe except in the cases where the man is manifestly dangerous to himself and his feilow workers.

A complicating factor which affects the oil company but has little or no effect on the drilling contractor is the delving of Government into business and the sanction of the National Labor Relations Board on actions of the unions. An oil company would have considerable difficulty discharging an employe regardless of how dangerous he was to his fellow workers, himself or the company; the drilling contractor is not hampered by these restrictions and the dismissal of an employe for carelessness would have no repercussions.

Due to this situation, oil companies are becoming increasingly wary in their hiring of men and a potentially careless or dangerous worker is avoided whenever possible. Once a man is on the pay roll and it is evident that he is a potential hazard, he can be educated into safety methods and safe procedures, special attention can be given him by his supervisor, he can be transferred to an operation where there is little danger of his doing any damage, or he may be shifted around to such an extent that he will resign or can be discharged without too much clamor.

Study of Accidents

Study of accident records and compilation of accident data for the purpose of analysis in the effort to eliminate as many accidents as possible is the plan followed by the safety directors for the major companies and the A.P.I. Department of Accident Prevention. Each company sends in a report of its accidents to the Department of Accident Prevention, giving the extent of the injury and as nearly as possible the direct and underlying causes. These are tabulated under the department in which the employe worked and under the company for which he worked. Totals issued annually in "Annual Summary of Injuries in the Petroleum Industry," for the department and for the entire industry, afford a direct comparison for each company and show how the company is progressing in relation to the industry and how each of its departments is progressing in relation to the departments of other companies.

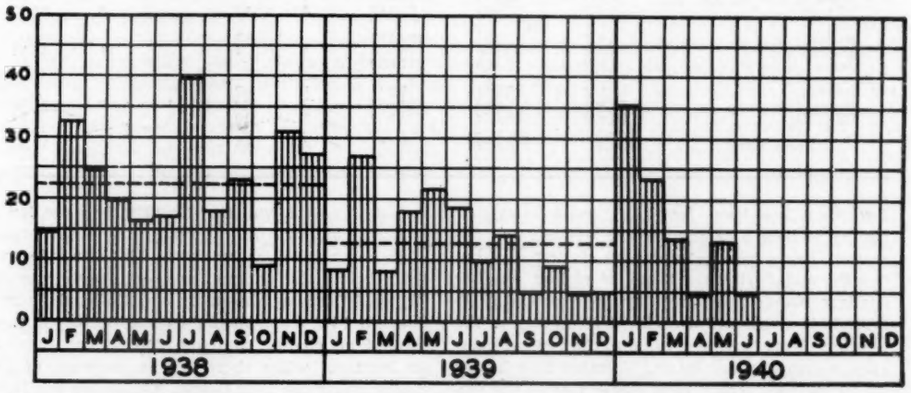


Fig. 3—Frequency rate of injuries to field employes: Accidents per million hours of exposure. Average for 1938, 22.36; average for 1939, 12.53; average first half of 1940, 15.95

The frequency rate of injuries to field employes is the chart being used by most safety directors in the Mid-Continent to illustrate graphically to employes just how their present and past records are comparing. They also show the safety director at a glance just how his company is progressing. Accident frequency is computed on lost-time accidents and the number of man-hours worked and is based on the formula:

$$\text{Frequency} = \frac{\text{Number of accidents} \times 1{,}000{,}000}{\text{Total man-hours worked}}$$

Severity is determined thus:

$$\text{Severity} = \frac{\text{Total days lost} \times 1{,}000}{\text{Total man-hours worked}}$$

$$\text{Injury index} = \text{frequency} + (\text{severity} \times 10)$$

In addition to the work above, the individual companies tabulate their accidents not only under

the departmental divisions but also compile these figures to show under which superintendent or foreman the accident occurred. This makes it possible to immediately single out a supervisor under whom a large number of accidents are occurring and to study his particular problem in detail in an effort to cut down his accident frequency or eliminate it entirely.

The comparative accident-frequency rating shows the method of most safety men for comparing the prevention efficiency of their men (Table 2). A glance at this table shows most of the accidents in the production department are occurring under "Gilbert" and all of the lost-time accidents are attributable to him. However, he is working more man-hours than the other foremen in this division, but his frequency offers a direct comparison. In the gasoline department, "Smith" stands out as he has worked 280,472 hours without a lost-time accident. "Burns" has an accident frequency almost three times the average. Copies of the comparison are sent to all foremen monthly.

Even weekly tabulations are made by the safety departments in their efforts to locate the times when most accidents take place. The accident frequency has been found by some safety directors to bear a relation to the weather and the season, being particularly high during the hot months and during the times of violent weather changes. Other safety men get no seasonal cycle but admit a relation of accident frequency to the weather. This is partially due to the type of operation a company carries on. Vacation time brings on an increase which is probably due to the employes thinking of vacation plans instead of the task they are performing. While the vacation schedule comes during the hot weather and the rush season, this latter classification is made possible because a large number of these accidents occur from 1 to 3 days before the injured is scheduled to go on his leave from duty.

The accident-experience chart merely shows the total number of injuries for each month and does not take into consideration the number of employes. It does show at a glance the trend in the accident line and by combining with it the number of employes, pay roll, cost of compensation and other figures it shows not only accident frequency but cost in relation to the pay roll.

Hiring of large groups of new men for special construction or rush work, the transferring of personnel from one department to another, or under different supervisors in the same department, shows up immediately as an increase on the experience chart. This is a natural reaction, according to safety men, for regardless of the carefulness of the personnel department, a certain number of inexperienced or careless men will be hired. Transfers increase the number of accidents due to the men having to perform a strange task, or a familiar task in strange surroundings and frequently in an entirely different manner than that to which they are accustomed. There is also the personality factor and the fact that frequently the employe is distracted by his own personal problem of moving and other changes.

Safety directors have found that there is a gradual decrease in the number of accidents as the employes grow older and acquire more experience on their jobs. However, in the cases where older employes are injured, the severity is apt to be much greater. This, they report, is probably due to two factors: Familiarity which leads to carelessness allowing a severe accident to take place, and the danger of an accident due to equipment failure, or a physical hazard, even though the employe has learned through experience to avoid the minor accidents.

This is evident when the production-experience chart is compared with experience and compensation costs table for the years 1931 to 1933. The number of employes and man-hours were not very high as this was at the end of the depression and most of the employes were experienced men. The frequency rate is fairly low but the severity rate is high.

In "Review of Fatal Injuries in the Petroleum Industry" (A.P.I. Bulletin) for 1939 there are listed 89 deaths among 315,731 employes or a death rate of 30 for each 100,000 workers. This is a substantially below the national accident death rate of 82 per 100,000 as shown by the National Safety Council. Five departments showed decreases, two showed no change, and one department showed an increase, while there was a decrease of 14 deaths under the 1939 figure. Tabulation for 1938 and 1939 by departments shows:

Department—	1938	1939	Increase or decrease
Refining	27	27	0
Production	29	18	11
Natural gas	11	6	5
Pipe line	8	7	1
Marine	4	4	0
Miscellaneous	4	1	3
Drilling	5	10	5
Marketing	15	16	1

A close check of the accidents which caused the deaths was made on 86 of the cases occurring during a recent year. Fifty-three, or 61.6 per cent of the accidents were due to supervisory causes and could have been avoided if the men had followed instructions, used proper precaution, or used safety equipment provided. In one case the man in charge allowed a junior employe to direct an operation which resulted in the employe's death. There were eight deaths due directly to physical hazards which means 9.3 per cent of the deaths could have been avoided by proper construction, etc. In determining the causes in the rest of the accidents it was found that there were a large number with insufficient details or the fatality was caused by some one outside the petroleum industry, as in the case of automobile accidents. In several of the cases resulting in death, arrests of automobile drivers were made. Twenty-five accidents, or 29.1 per cent, were not avoidable in the ordinary sense.

Examination of the comparison by departments the table in the Annual Summary of Injuries in the Petroleum Industry for 1939 (A.P.I.) shows that the drilling department leads by far in the number and severity of accidents and on the accident index (Table 3). The 1939 accident index for the drilling department was 112.12; the frequency was 45.92 and the severity 6.62. The index for all departments was 26.06, the frequency 11.96 and the severity 1.41. However, on the basis of the decrease in the frequency the drilling department shows up better than the industry as a whole with a decrease of 16.7 per cent on the injury index, a decrease of 33.47 per cent in the frequency and an increase of 0.9 per cent in the severity between 1934 and 1939. During the same time the industry as a whole showed the following changes respectively, 13.3, 16.4 and 16.9 per cent. The year 1934 was the first time the drilling department was not considered as part of the production department. When the drilling and production departments were separated the production department had a drop of 36.85 in the index, 33.81 in the frequency and 0.30 in severity.

Injuries by Departments

By studying the number of workers to each disabling injury in each department it is seen that 1 out of every 11 men employed in the drilling department were hurt. The next most dangerous department is the exploration with a ratio of 1 to 20, followed closely by retail marketing with 1 to 22. The least dangerous is the refining with a ratio of 1 to 59, and the entire industry has an average of one accident to 40 workers. Another interesting figure is the decided increase in the number of workers to each accident which shows in the production department between 1927 and 1934. There was a jump from 6 workers to each accident to 21 for each accident, and this figure did not change until 1939 when it jumped to 33 men working for each accident occurring. The pipe-line department showed even a greater increase in this respect with a jump from 6 workers to 31 per accident in 1937. In 1939 the pipe-line department was separated into gas and oil, the latter showing an average of one accident to every 55 employes and the former showing 31 employes to each accident.

On a graph showing the number of workers to each disabling injury (Fig. 2) it is seen that for all departments it compares with the graph of a single company chosen. It also shows a continued progress on the part of the refinery division, little or no progress in drilling or production in the past 5 years and at the same time a fluctuation in marketing, marine and pipe line. The line showing all industries is straight at 33 for the past 4 years.

The main objective of accident-prevention directors at present is to develop safety consciousness for every day. They have found through experience that the "safety revival meeting" is effective for a short period of time only and then the accident frequency begins to increase. The awarding of plaques and loving cups for no accidents or the minimum accidents in a division is considered an aid by safety directors and safety councils.

TABLE 2—COMPARATIVE ACCIDENT-FREQUENCY RATING

	Total hours: Man-hours exposure			Industrial injuries: Nonlost time		Lost time		
Department and foreman:	Month	Year	Without a lost time accident	Month	Year	Month	Year	Cumulative lost-time accident frequency rate
Drilling:								
Brown		4,073	4,073	..	1	..	..	.....
Thompson	1,168	1,168	1,168	1	1	..	..	.....
Production:								
Richardson	4,717	23,637	130,630	..	..	..	..	.....
Warren	2,114	11,542	123,089	..	1	..	..	.....
Gilbert	12,273	57,945	21,786	3	17	..	3	51.77
Gasoline:								
Smith	7,478	41,157	280,472	..	2	..	..	.....
Burns	10,454	52,876	46,488	1	4	..	1	18.91
Jones	3,104	16,168	217,052	..	..	..	..	.....
Totals by departments:								
Drilling	1,168	5,241	5,241	1	2	..	..	.....
Production	77,291	411,649	34,454	5	43	1	9	21.86
Gasoline	28,238	153,622	132,032	2	10	..	1	6.51
Grand total	105,697	570,512	47,734	8	55	1	10	17.53

TABLE 3

	1934	1938	1939
Number of workers	285,294	316,987	315,731
Number of workers to each fatality	2,801	2,733	3,222
Number of workers to each disabling injury	33	38	40
Injury index	31.21	28.54	26.06
Injury frequency	14.31	12.64	11.96
Injury severity	1.69	1.59	1.41

QUESTIONS ON TECHNOLOGY

By W. L. NELSON, TECHNICAL EDITOR

Oil-Soluble Organic Bases

We are desirous of obtaining a method of reducing the neutralization number of lubricating oils which have been compounded with fatty acids and metallic soaps. Can you suggest possibly some alkali substance that is soluble in oil and will react to phenolphthalein?—M. S. H.

I recall no organic alkaline materials that are soluble in oil and also give a pink end point with phenolphthalein. Some of the amines give a slight pink coloration when used in the pure state but they are such weak bases that even a small amount of a relatively strong acid destroys the pink color even though the mixture is still alkaline.

The alkyl sulphonium, phosphonium and ammonium hydroxides are among the strongest organic bases. As an example, triethyl sulphonium hydroxide may be prepared from ethyl disulphide and ethyl iodide as follows:

$$(C_2H_5)_2S + C_2H_5I = (C_2H_5)_3SI$$
$$(C_2H_5)_3SI + AgOH = (C_2H_5)_3SOH + AgI$$

Other examples of alkyl bases are:

$(CH_3)_4POH$ tetramethyl phosphonium hydroxide
$(C_2H_5)_4NOH$ tetraethyl ammonium hydroxide

These are strong bases; they will react with carbon dioxide and will form crystalline salts with acids.

It may be possible to develop members of these alkyl bases that have long side chains and which would be soluble in oil.

Cooling Gas by Coils in Ground

The writer is confronted with a gas-cooling problem in a territory where there is no water available; we have planned to remove the heat from the gas which is being compressed to 1,000 lb. with aerial coolers. These coolers will reduce the temperature of the gas to approximately 130° and it is our desire to cool it to 80°. The soil temperature at a level 4 ft. below surface is 72°. We would like very much to have your opinion as to whether the heat from 4,000,000 cu. ft. of gas could be removed by passing the gas at this level through the soil. How much surface would be required and what arrangement could you suggest? Do you know of any case where an operation of this sort is being used?—E. L. C.

No conclusive answer can be given to your problem although a discussion of the various factors will be of some assistance. You can easily conduct experiments by burying, say 30 ft. of pipe and flowing gas through the coil for several days.

The resistance to heat flow are as follows:

1. A gas film on the inside of the pipe. This can be computed with sufficient accuracy and will permit a flow of 4 B.t.u. per sq. ft. of surface per degree of temperature difference per hour for low velocities, up to as high as 40 B.t.u. at a velocity of about 20 ft. per second.

2. The pipe wall and any scale that may accumulate on it. In this situation this resistance would be negligible.

3. The soil around the pipe will itself act as a resistant out to such a distance that the temperature is 72° F.

The soil resistance is the real problem and cannot be computed with accuracy. If the soil is heated to a distance of 4 ft. from the pipe, the heat dissipation as B.t.u. per hour per degree F. of temperature difference per square foot of surface will range from 0.3 to 0.7. Thus, for your situation, each square foot of pipe surface will dissipate about 15 B.t.u. of heat into the soil during each hour.

It is not the policy of this department to make engineering computations of a detailed nature and hence the above should be taken in a most general way. Nevertheless, the above figures indicate generally that about 3 miles of pipe is required for the job.

Simplified Flow Diagrams

Glycol Dehydration Plant

What type of processing plant is used for glycol dehydration of natural gas? Is refrigeration necessary in such a plant?—L. R. C.

The general flow in recently installed combination diethylene glycol and refrigeration dehydration plants is shown on this page. The use of refrigeration is not necessary but refrigeration does increase the absorbing efficiency and in fact, some water (along with gasoline) can be condensed from gas by refrigeration alone. Thus, a moderate amount of refrigeration can greatly lessen the load on the absorption system. The exact combination of refrigeration and absorption that should be used is of course an economic problem that depends upon the particular gas and particular plant situation.

Diethylene glycol is somewhat similar to glycerin but it has a lower boiling point and hence the water can be distilled from it without using a vacuum. Among other liquid absorbents that have been employed or proposed are calcium chloride solutions, same mixed with glycerin, and thiocyanates. Solid adsorbents such as silica gel and activated alumina may be used as adjuncts to liquid absorption plants such as the one outlined on this page. They have the advantage of being somewhat simple in design and intermittent in operation so that peak loads can be handled without building an overly large capacity absorption plant.

Corrosion Resistance of Copper Steel

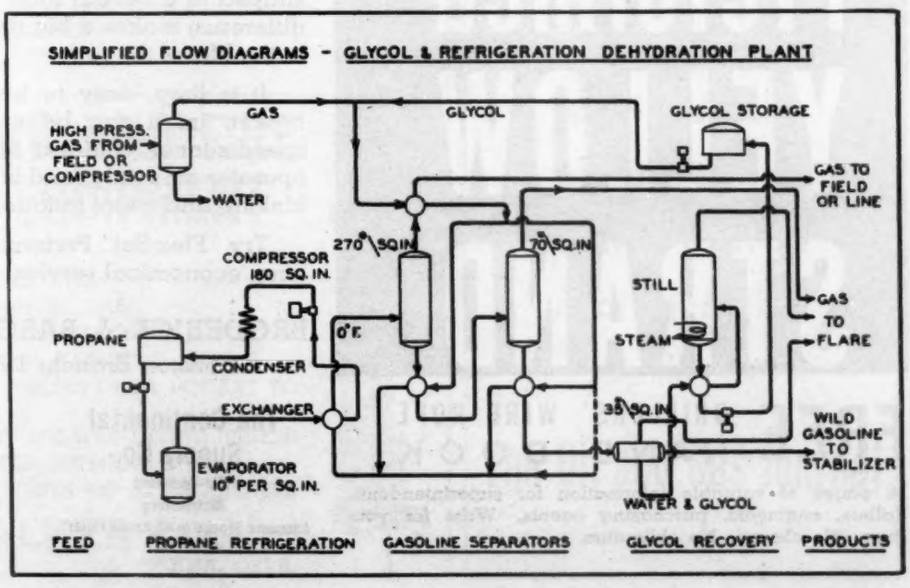
What percentage of copper would steel plates that are 3/32-in. thick have to contain to make them last as long as an all-steel plate which is 5/32-in. thick? All plates have a 2-oz. pressure per sq. ft. The plate will be used for both sweet and high-sulfur crude oil.—J. E. J.

Your question involves three factors—strength, resistance to atmospheric oxidation or rusting, and resistance to the corrosive action of crude oil.

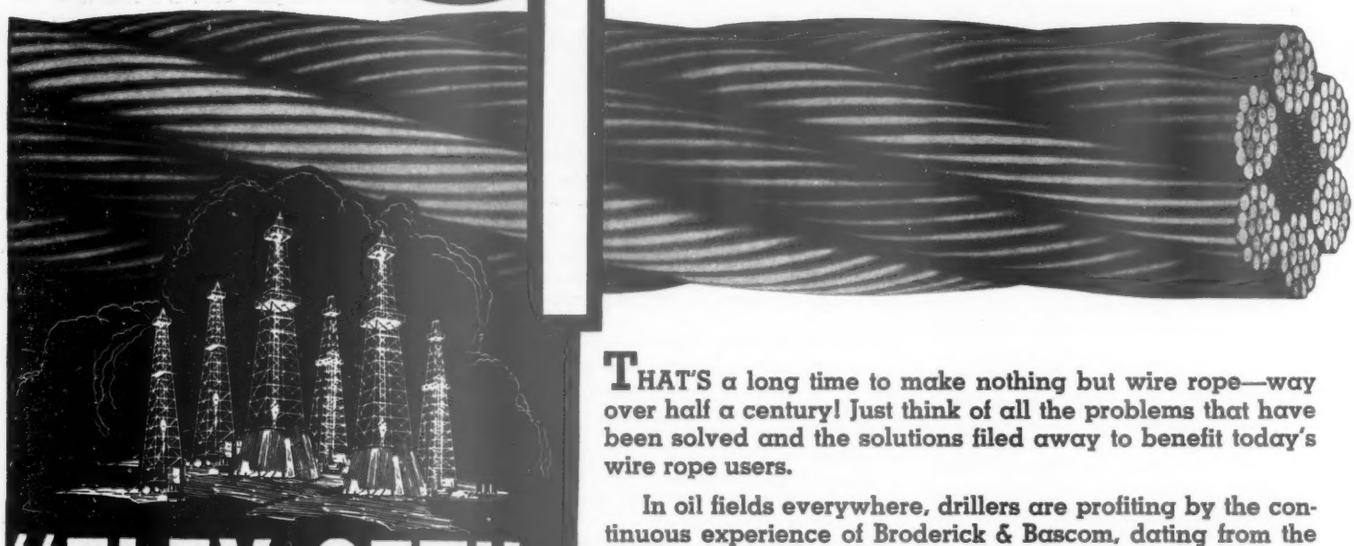
Copper steel is not accepted as outstanding for any type of corrosion except exposure to the atmosphere. The scale of rust that is produced in air is tightly adherent to the surface and thus slows down the rate of corrosion. However, if the plate is immersed in water so that the scale cannot dry out, the copper steel behaves scarcely better than plain carbon steel. When exposed to the atmosphere the copper steels containing 0.6 to 1.0 per cent of copper (with high phosphorous) are said to last four to six times as long as plain steel.

For a sweet crude oil, and with the outside of the plates exposed only to the atmosphere, an 0.6 to 1.0 per cent copper steel (with high P) should be satisfactory at a thickness of 3/32 in. It would have a strength that is more than adequate (yield point of 45,000 lb. per sq. in.) and would be about equivalent to a 5/32-in. carbon-steel plate except that it would not be as stiff. The cost of such a steel would probably be too great to justify its use.

Copper steels are not recommended for sour crude oils, although it is possible that very large amounts of copper might produce a satisfactory steel. The use of small amounts of chromium or chromium and nickel, would be a more logical approach. However, no low-alloy steels have been widely used for such purposes.



64 YEARS



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V-13R8

Pipe-Line Activity

Tennessee Pipe-Line Contracts With Producers for Gas Supply

At the Federal Power Commission hearing in Washington last week it was revealed that the Tennessee Gas & Transmission Co. has contracted for gas production of the Producers Oil & Gas Co., Shreveport, La. The pipe-line company, headed by Curtis B. Dall, proposes to lay a natural-gas pipe line from North Louisiana and Texas to eastern Tennessee and North Carolina, serving Chattanooga, Knoxville, Nashville and other Tennessee cities as well as Ashville, N. C. Approval for the $20,500,000 project is sought from the Federal Power Commission.

Southern Natural Will Lay 120-Mile Line in Louisiana

SHREVEPORT, La.—The Southern Natural Gas Co. of Birmingham, Ala., will lay a gas pipe line from Joaquin to Monroe, La., about 120 miles distant, to supplant declining Monroe gas production. The company, through its subsidiary, Southern Production Co., has acquired acreage in the Joaquin gas-condensate field of Shelby County, East Texas, for new gas development. In a transaction with Redditt & Gray the company acquired 3,300 acres and three gas wells in the field. Later, the Pure Oil Co. farmed out approximately 2,700 acres to the company, giving a total of about 6,000 acres in the field. Southern Production Co. has opened offices in Shreveport, La.

Bell Ships Crude From Falls City, Neb., Pool

M. L. Freese, president of the new Bell Pipe Line Co. of Nebraska, confirms a report that the company has commenced shipments of crude by tank car to various points in the North. Three carloads of 4½-in. pipe have been shipped to Falls City; it is estimated that the pipe line from the field west of Falls City will be completed to the loading rack by October 10. The line will be buried at a depth of 30 in. The system will consist of a gravity system and pressure system with diesel-driven pumps installed with sufficient capacity to handle the volume that is expected later.

Bell Pipe Line Co. is a new corporation, organized to handle Nebraska business for Bell Oil & Gas Co. which also operates pipe-line systems in Oklahoma, Texas, and Illinois. The company expects to post a price of 80 cents for crude oil in this area. At present the average gravity of the crude being shipped by Bell is 31.5; it has a very low b.s.&w. content. It is reported that to date no pipe-line companies have actually commenced operations for laying of pipe lines in this area.

The capacity of the Bell line will be about 10,000 bbl. daily for the present. The length of the Bell line will be slightly under 4 miles. The sales office for crude oil for Nebraska will be at the Bell headquarters in Tulsa.

Williams Brothers Nears Completion of Two Lines

Less than 20 miles remains to be laid to complete the 140-mile project being built by Williams Brothers Corp. for Manufacturers Light & Heat Co., Manufacturers Gas Co., and Pennsylvania Fuel Supply Co. for the purpose of transmitting natural gas from West Virginia to New York State. The line will be in operation October 10.

This contractor began laying 54 miles of 8-in. in Kansas early last week for National Refining Co. In the construction of a 200-mile 4½-in. gasoline line from Fort Worth to Oklahoma City for Magnolia Pipe Line Co., one of this contractor's gangs recently completed the section between Fort Worth and the Red River. The other gang will complete its work within a week.

New Line Will Provide Outlet For Frederick Field

Construction of a 7 mile, 4-in. pipe line from the Graham lease in the South Frederick oil field to a loading rack at Frederick, in Tillman County, Oklahoma, has been announced by the I.T.I.O. and Foster Petroleum companies, which control the district.

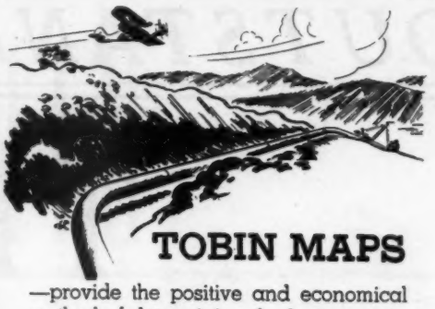
Gulf has been the only purchaser in the field, which was discovered some 3 years ago. Recently Gulf extended its pipe-line system between Burkburnett and the Altus district and is reported running the line at capacity at this time.

Sinclair Completes Gathering System in North Texas Pool

The pipe-line department of Sinclair Refining Co. is completing this week a gathering system to provide an outlet for the Muenster pool, North Texas. Oil is to be shipped by trunk line to Fort Worth.

Outlet May Be Laid From Sugar Creek, La.

Triangle Drilling Co., Inc., is making survey for construction of an 18-mile 4-in. pipe line from the Sugar Creek field of Claiborne Parish, Louisiana, to Weller tank farm near Homer. The Sugar Creek field has not had a pipe-line outlet since Caddo Crude Oil Purchasing Co. (M. J. Grogan) discontinued runs some months ago.



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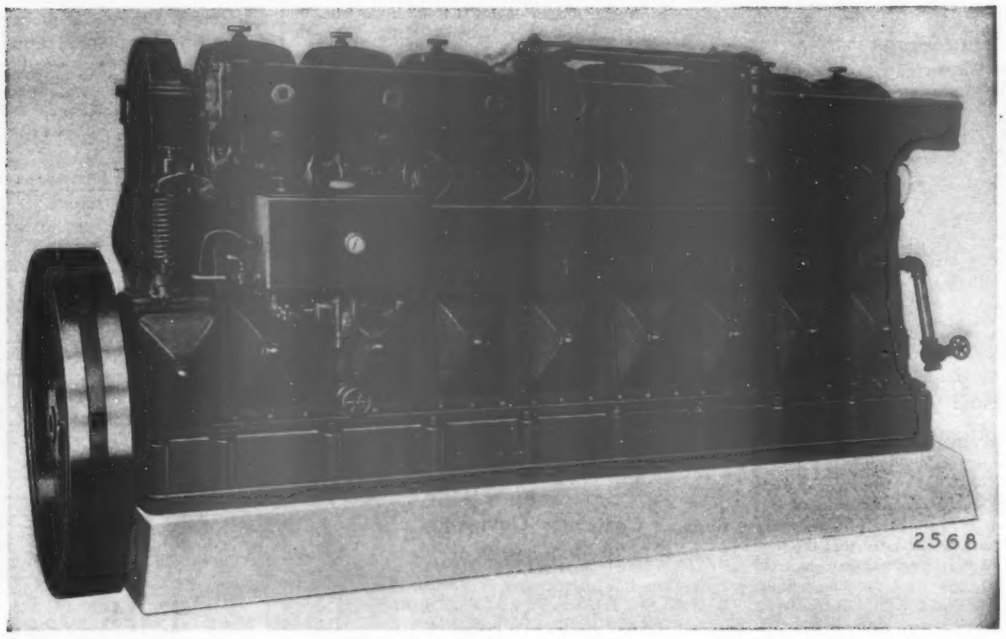

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FIELD DEVELOPMENTS...

HIGHLIGHTS FROM THE WEEK'S NEWS—

OKLAHOMA—A new crop of wildcats was started, including deep tests in Hughes and Woods counties and two outposts in the Prague area, Lincoln County. An Okfuskee County wildcat had oil showing in Oswego and Prue formations.

KANSAS—A pool producing from an unidentified lime at 2,317-25 ft. was opened in Russell County, 2 miles north of the Greenvale pool, producing from Lansing lime. A Rice County wildcat near Alden had oil showing in Simpson sand. A Pratt County outpost gave promise of opening the first Arbuckle lime pool in that county.

WEST TEXAS—Wildcatting led the activity of the week in West Texas as new exploratory holes were announced for Yoakum County, for the area west of the Duggan field in Cochran County and for the area east of the Slaughter field in Hockley County.

NORTH TEXAS—A possible discovery well from the deep Marble Falls lime was drilling plug in southwestern Jack County as the week closed. Shows of oil in a new Clay County wildcat were also attracting attention.

WEST CENTRAL TEXAS—The third well in the recently opened Dobbs field south of Carbon in Eastland County blew in last week to indicate the largest well in Eastland County in many years. Production is from the deep Caddo lime.

EASTERN TEXAS—Small extensions were afforded the Long Lake field in Freestone County and the Bazzette field in Navarro County.

LOUISIANA GULF COAST—Drilling record for Louisiana established at Calcasieu Lake dome, Cameron Parish. Second well in Iowa field cores deep pay.

TEXAS GULF COAST—Large producer extends Alta Loma field, Galveston County.

SOUTHWEST TEXAS—Wilcox trend in Southwest Texas enhanced by new discovery in Live Oak County.

ILLINOIS—The best well in several weeks uncovered lower McClosky production in the Albion pool. Four prospective pool openers show oil.

INDIANA—A new pool opener near the city of Vincennes brightens the picture in Indiana. It is in the McClosky.

LA-ARK-TEX—A new Wilcox pool in the Jena district maintains interest in the tristate area's most active play.

MICHIGAN—Allegan County's newest pool near Overisel is the scene of an active play as operators rush in to avail themselves of the flush.

COMPLETIONS IN ALL FIELDS . . .

(Week Ended September 28, 1940)

	Oil	Gas	Dry	Total	1940 total comp. to date	1939 total comp. to date
N. Y., Pa., and W. Va.	98	30	6	134	4,640	2,710
Ohio	5	10	10	25	859	575
Indiana	9	3	3	15	337	226
Kentucky	4	1	5	10	355	522
Illinois	65	0	19	84	2,863	2,648
Michigan	10	1	11	22	869	1,084
Kansas	27	0	5	32	1,319	975
Oklahoma	21	5	14	40	1,336	1,338
Texas:						
North Central Texas	35	0	17	52	2,147	1,794
West Texas	31	0	4	35	1,397	1,349
Texas Panhandle	10	1	0	11	451	312
Eastern Texas	13	1	3	17	454	545
Gulf Coast Texas	17	0	2	19	948	1,013
Southwest Texas	15	0	12	27	1,628	1,849
Total Texas	121	2	38	161	7,025	6,862
North Louisiana	10	3	3	16	450	407
Louisiana Gulf Coast	6	0	3	9	771	509
Total Louisiana	16	3	6	25	1,221	916
Arkansas	1	1	1	3	141	197
Montana	2	0	2	4	166	124
Wyoming	3	0	0	3	122	95
Colorado	0	0	0	0	12	17
New Mexico	1	1	0	2	414	425
California	12	1	2	15	775	701
Miscellaneous	0	0	5	5	164	38
Total United States	395	58	127	580	22,618	19,450
Total previous week	413	49	143	605		
Week ended Sept. 30, 1939	350	38	109	497		

SUMMARY OF OUTSTANDING FIELDS . . .

(Week Ended September 28, 1940)

FIELD—	Active operations	Oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS					
K.M.A.	58	1	500	1,453	34,757
Wasson	42	6	6,363	948	32,480
Ector County	49	11	10,443	2,286	52,396
Hull-Silk	63	8	6,428	360	9,773
East Texas	19	7	220	25,916	448,046
OKLAHOMA					
Cumberland	9	0	0	4	1,800
Oklahoma City	11	1	1,111	839	94,850
KANSAS					
Bornholdt	14	2	1,040	121	3,000
Burnett	6	1	350	122	5,850
Stoltenberg-Wilkins	16	3	541	117	4,050
Trapp	15	4	1,000	577	15,400
LA-ARK-TEX					
Olla, La.	11	3	312	39	4,230
Cotton Valley, La.	5	1	480	158	13,575
MICHIGAN					
Adams	19	1	2,160	3	2,371
ILLINOIS					
Salem	56	10	647	2,897	150,104
Centralia	10	0	0	716	24,300
Louden	37	13	3,764	975	73,941
Other basin fields	241	42	13,255	2,434	100,958
Old fields	....	....	.....	.....	10,964
NEW MEXICO					
Lea County	45	0	0	2,558	82,610
Eddy County	52	0	0	616	16,290
MISSISSIPPI					
Tinsley	9	0	0	79	20,968

By

R. MARNE SANFORD

Outposts Seek Extensions to North Permian Basin Fields

MIDLAND, Tex., Sept. 30.—Extension activity continues in the northern part of the West Texas portion of the Permian basin as wildcat outposts were staked the past week in Yoakum, Cochran, and Hockley counties.

Attempts to extend farther the large Wasson field in Yoakum and Gaines counties were seen when a new outpost was staked in the Waples-Platter area of the Wasson field. It is Forest Development 1 A. C. Whisenant, on a 160-acre tract formerly held by Shell Oil Co., Inc. Located 660 ft. from the south and east lines of Section 553, Gibson Survey, it is 1½ miles north of the Shell 1 Waples-Platter, small discovery well in the extension area, and 1¼ miles northwest of the Sloan & Zook 1 Waples-Platter, small well not yet officially completed. This extension area to the northeast of the Bennett sector of the large Wasson field was opened by Shell 1 Waples-Platter prior to the joining of the Bennett and Wasson fields last year. The discovery well checked considerably lower, structurally, than wells in the Bennett field, indicating either that a fault or a steep dip existed on the northeast end of the Wasson-Bennett structure. The drilling of subsequent tests in the area has confirmed the latter supposition, as no evidence of faulting has been found.

Farther north in the Permian basin and in the Slaughter-Duggan area of Hockley and Cochran counties, new outposts were staked to the west of Duggan and to the east of Slaughter. Now that the two areas are joined their combined east-west length is about 19 miles. No drop in structure has been found so that production could easily enough be found in the two new wildcats, one 2 miles west of Duggan and the other 9 miles east of Slaughter. The west outpost to Duggan is Rhodes and Atlantic 1 C. S. Dean, C NE Tract 4, League 89, Lipscomb County School Lands Survey. Honolulu Oil Corp. has assigned 2,080 acres, checkerboarded, for the drilling of the 5,300-ft. test. No wildcats have been drilled within several miles of the new outpost. The east outpost to Slaughter is Cascade Petroleum 1 Walker, Section 22, League 22, McCulloch County School Lands Survey, located 440 ft. from the north and 2,633 ft. from the west lines of the section. The drill site is on a 152-acre tract donated toward the test by Honolulu Oil Corp. Standard Oil Co. of Texas, which worked the area with seismograph, is reported to have donated approximately 1,600 acres toward the test. The location is 7 miles northwest of the town of Ropesville and 3½ miles north of the Terry County line.

Andrews County

Phillips Petroleum Co. is still testing its prospective discovery well in southeastern Andrews County. It is 1 Embar, Section 5, Block 44, Township 2n, T.&P. Survey. Instead of shooting while bottomed at 4,299 ft. as was originally planned, it was deepened to 4,335 ft. Shot is now planned for the section at 4,240 ft., which is still showing considerable gas, estimated to be approximately 3,000,000 to 4,000,000 cu. ft. daily.

NORTHERN WEST TEXAS COMPLETIONS

(24-hour gages—from Permian lime)

Dawson County

Wildcat: Magnolia 1 Sandidge, SE SE Sec. 22, Blk. 34, Twp. 4n, T.&P. Sur., top anhydrite 2,195 ft., brown lime 4,210 ft., solid lime 4,810 ft., dry at 5,345 ft., T.D.

Gaines County

Seminole field: Amerada 2 Coffey, 667 bbl., naturally, ½-in. choke 5,061-5,230 ft.

Atlantic & Osage 1-A Riley, 736 bbl., ½-in. choke, 4,000 gal. acid, new T.D. 5,270 ft., second completion.

Ohio 3 Tippett, 765 bbl., ½-in. choke, 2,000 gal. acid 5,100-5,268 ft.

Wasson field: Carter 6-D Wasson, 1,336 bbl., 1-in. choke, 9,000 gal. acid, 4,910-5,040 ft.

Carter-Phillips 3-B Wasson, 1,005 bbl., ¾-in. choke, 9,000 gal. acid 4,912-5,025 ft.

Mitchell County

Dockery-Robbins field: Ewing 1 Strain, 152 bbl., pumping, 360-qt. shot 1,610-1,700 ft.

Yoakum County

Wasson field: Alco Oil 4 Chatterton, 703 bbl., open tubing, 10,000 gal. acid 4,969-5,164 ft.

Basin States Oil 2 Fisher-Walker, 486 bbl., ¾-in. choke, 10,000 gal. acid, 4,840-5,198 ft.

Mabee Oil & Gas 6-C, 7-C, 8-C Willard, abandoned locations.

Mabee Oil & Gas 4-B, 6-B, 7-B, 8-B Willard, abandoned locations.

Oil Development 2-38 fee, 1,309 bbl., 1¼-in. choke, 10,000 gal. acid 4,910-5,075 ft., P.B. 5,085 ft.

Shell 14-D Baumgart, 1,524 bbl., open tubing, 10,000 gal. acid 4,905-5,175 ft.

NORTHERN WEST TEXAS DRILLING REPORT

Andrews County

Phillips 1 Embar, 60 ft. S line Sec. 31, Blk. 10, University Lands Sur., cored 4,146-58 ft., slight show oil, T.D. 4,335 ft., prepare to shoot at 4,240 ft., est. 3,000,000 to 4,000,000 cu. ft. gas showing.

Cochran County

Rhodes & Atlantic 1 Dean, C NE Tract 4, Lge. 89, Lipscomb County School Lands, first report.

Gaines County

Fred Postello 1 Henry James, SE Sec. 368, Blk. G, C.C.S.D.&R.G.N.G. Sur., location.

Maloney Drlg. Co. 1 A. D. Neal, SW Sec. 34, C.&M. Cert. No. 414, location.

Hockley County

Cascade Pet. 1 Walker, Sec. 22, Lge. 22, McCulloch County School Lands, first report.

Stonewall County

Shell 1 J. D. Patterson, SW NW Sec. 393, Blk. D, H.&T.C. Sur., Ordovician test, drilling 6,500 ft.

Yoakum County

Sloan & Zook 1 Waples-Platter, Sec. 565, Blk. 4, Gibson Sur., top Brown lime at 4,340 ft., slight show oil 5,240-60 ft., swabbed and flowed 167 bbl. oil in 24 hr., S.I. for gage.

Forest Development 1 A. C. Whisenant, SE Sec. 553, Gibson Sur., 1½ mi. N outpost to Waples-Platter area, first report.

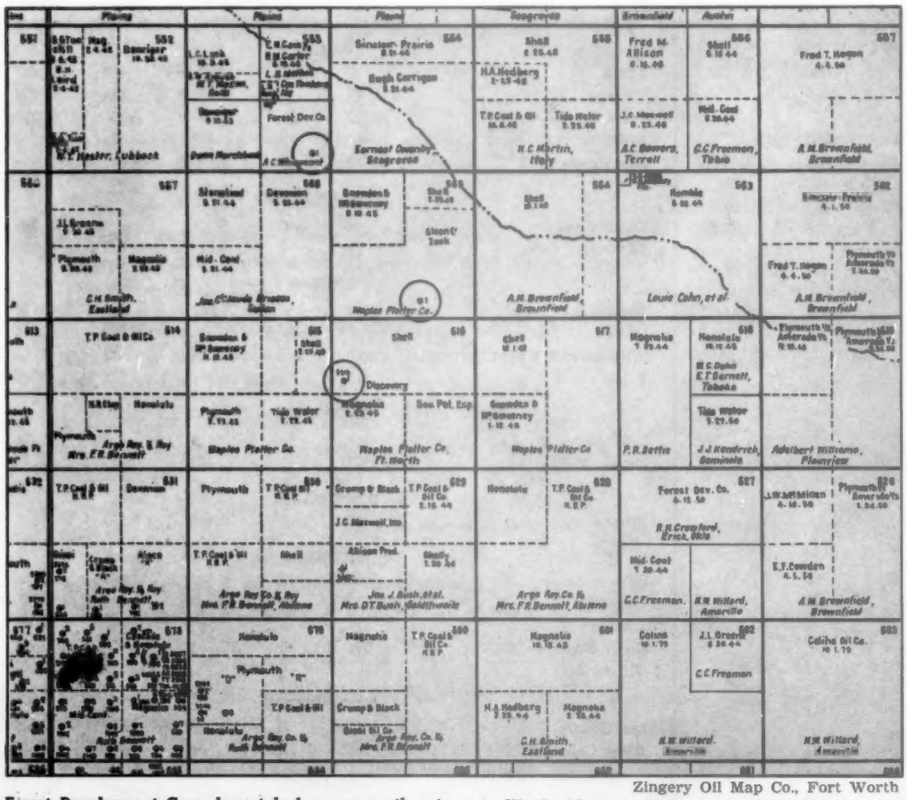
SOUTHERN WEST TEXAS

At the time the Soma Oil & Gas Syndicate brought in its 1 Noelke, wildcat discovery in extreme western Crockett County, several months ago, reports were circulated that the well was capable of 25,000 to 40,000 bbl. daily. Further testing revealed that only gas was flowing and the oil was merely a spray. Nevertheless, high-spirited and high-priced lease trading followed the discovery and several new outposts were soon started. With the close of this week was seen the possibility that early reports regarding the Soma field were not entirely wrong. True, several dry holes and gas wells have been drilled in the Soma area during the past 3 months. However, a diagonal southeast offset to the discovery well has been brought in for flows of oil in excess of 250 bbl. hourly. This would give it a daily rating of about 6,000 bbl. The well is J. Silas Pittman, Boyd R. Cox and George Atkins 1 W. T. Noelke, 2,310 ft. from the south and east lines of Section 30, Block GG, H.E.&W.T. Survey. The elevation of the new well is 2,438 ft. and it is reported to have checked 78 ft. higher on the top of the pay section than the discovery well. Tubing was being run and storage was being erected for official gaging early next week. The well roared in after only scratching the pay section at 1,136 ft., tools still being in the hole. A new outpost two locations to the east has been staked by the operators.

Upton County Extension Gaged

The 1½-mile-south extension (correction from 2½ miles) to the McElroy field in Upton County was officially gaged the past week for 233 bbl. daily, punping. It is Texas Pacific Coal & Oil 1 Eddleman, Sec-

(Continued on Page 92)



Zingery Oil Map Co., Fort Worth

Forest Development Corp. has staked a new north outpost to Waples-Platter extension area of the Bennett sector of the large Wasson field in Yoakum County. The outpost is northwest of the yet uncompleted Sloan & Zook test which is northeast of Shell Oil Co., Inc.'s discovery well

Second Wilcox Sand Field Is Established in Olla Area

By GEORGE WEBER

SHREVEPORT, La., Sept. 30.—The pace of the Olla-Jena play in La Salle Parish, North Louisiana, quickened last week with completion of the Jena wildcat, and the spudding of new wildcats north and southwest of Olla. Arkansas Fuel Oil Co. is beginning 9-C Tremont Lumber Co., about 1½ miles due west of the south end of present Olla production in the first exploration west of the proven area since Olla was discovered.

North of Olla, Rowan & Hope are planning a wildcat near Placid 17 Louisiana Central, a gas well in 19-11-3e, about 4 miles north of Olla. In Olla proper, 11 operations are under way, and 3 new wells were completed.

H. L. Hunt 1-A Goodpine, SW NW 10-7-3e, near Jena was completed last week in Wilcox sand, making an initial production of 6,000,000 cu. ft. of gas and about 48 bbl. of fluid, 5 per cent basic sediment and water, through a 16/64-in. choke. The wildcat showed oil and gas several weeks ago and has prompted an intense lease play in the general area, 18 miles southeast of Olla. A west offset has been begun by the same operator.

Acreage in the Olla area is very closely held between Arkansas Fuel Oil Co. and Placid Oil Co., an H. L. Hunt company. The Olla field proper has not yet been defined in any direction. Production is from several relatively thin oil sands which appear to be fairly continuous through the currently developed field. A well failure on the edge of the field would not be considered a definition of production, however, due to the character of the sands, which may pinch out and reappear along a trend.

Deep Lisbon Test Shows Oil

J. D. Caruthers, Trustee 1 Simmons unit, located in the Lisbon field of Claiborne Parish, about 2 miles southwest of Lisbon Exploration 1 Vaughn, last week showed oil in the upper Travis Peak formation. A 17-ft. section of sand was reported from cuttings and cores at 5,341-62 ft. and an electrical log of the test was run before drilling was resumed. Interest in lower horizons at Lisbon, incited several months ago with the completion of the deep Lisbon Exploration 1 Vaughn, is again quickened by the Caruthers show, and the result may be several Lisbon tests deepened beyond the Pettit lime pay in the lower Glen Rose.

Union Test at Critical Stage

Union Producing Co. 1-A Meadows, a wildcat north of Lisbon topped the Cotton Valley formation at 7,423 ft. last week and is drilling ahead. Interest in this test will increase as it approaches Bodcaw and associated sands productive in the Cotton Valley field, 30 miles to the west.

NORTH LOUISIANA COMPLETIONS

Sligo—Bossier Parish

H. M. Harrell et al 1 Porter.....SE NW NE 20-17-11
50,000,000 cu. ft. gas, R.P. 1,750 lb., porous lower Glen Rose lime 4,142-57 ft. and 4,230-45 ft., set 5½-in. casing 4,135 ft., T.D. 4,300 ft.

Caddo—Caddo Parish

A. R. Hancock 1 Louark fee.....SE NE 18-21-15
200 bbl., open tubing, T.D. 1,690 ft.
E. G. Hutchinson 1 Muslow.....NE NE 31-21-15
Pumping 18 bbl., T.D. 1,589 ft.
Pelham Oil Corp. 5 Bickham....NE SW NE 28-21-15
Pumping 150 bbl., 3,000 gal. acid, T.D. 1,549 ft.
Tiger Oil & Gas Co. 2-B Crystal fee....SW 24-21-16
Pumping 5 bbl. oil, 50 bbl. salt water, T.D. 997 ft.
J. Z. Werby et al 1 Darnell.....NW 17-22-16
Dry, T.D. 3,442 ft.

Wildcat—Concordia Parish

Fain Gillock et al 1 Pittsfield .NW NW NW 40-8n-10e
Location abandoned.

Bull Bayou—De Soto Parish

R. L. Reese 1 Harp et al.....SW NW NE 35-12-11
30 bbl. open tubing, reperf. 2,516-22 ft., T.D. 2,724 ft.

Wildcat—La Salle Parish

Atlantic 1-B Goodpine.....NW NW 26-7-2e
Dry, salt water, top Wilcox 2,490 ft., T.D. 4,502 ft.
H. L. Hunt 1-A Goodpine.....SW NW 10-7-3e
48 bbl., 5 per cent basic sediment and salt water, 16/64-in. choke, est. 6,000,000 cu. ft. gas, T.P. 1,100 lb., C.P. 1,200 lb., T.D. 3,690 ft.

Olla—La Salle Parish

Placid Oil Co. 19 Louisiana Central....NE NW 36-10-2e
96 bbl., 13/64-in. choke, 10 per cent basic sediment and salt water, T.P. 160 lb., C.P. 500 lb., perf. 2,250-60 ft., T.D. 2,298 ft.
Placid Oil Co. 25 Louisiana Central....NW SW 19-10-3e
96 bbl., 22/64-in. choke, 8 per cent basic sediment and salt water, T.P. 40 lb., C.P. 300 ft., perf. 2,222-26 ft., T.D. 2,383 ft.
Placid Oil Co. 31 Louisiana Central....NW SW 30-10-3
120 bbl., heading, ¼-in. choke, 6 per cent basic sediment and salt water, C.P. 400 lb., T.P. 0 lb., 7-in. casing 2,410 ft., perf. 2,230-40 ft., T.D. 2,410 ft.

Urania—La Salle Parish

R. E. Trichel 1 Doughty.....NW SE NW 36-10-1e
Pumping 15 bbl. oil and 200 bbl. salt water, T.D. 1,528 ft.

Wildcat—Tensas Parish

H. L. Hunt 2 Chicago Mill & Lumber Co.....
SW NE 30-12-10e
Dry, T.D. 4,323 ft., top Cockfield 767 ft., Cane River 2,550 ft., Wilcox 3,010 ft.

Monroe—Union Parish

Memphis Nat. Gas Co. 10 Lankford .NW SW 29-23-4
3,000,000 cu. ft., R.P. 960 lb., T.D. 2,210 ft.

Cotton Valley—Webster Parish

Hunt Oil Co. 1 Crawford et al... NW NW SE 30-21-10
480 bbl., ¾-in. choke, T.P. 800 lb., C.P. 1,150 lb., D sand 8,442-65 ft., Bodcaw sand 8,541-68 ft., set 7-in. casing 8,608 ft., perf. 8,442-65 ft., T.D. 8,610 ft.

Estimated Daily Production

Estimated daily gross production week ended September 27:

NORTH LOUISIANA

	Barrels
Bellevue	470
Caddo light	5,800
Caddo heavy	2,250
Converse	505
Cotton Valley	*13,575
Cross Lake	3,185
De Soto and Red River	1,020
Elm Grove	340
Haynesville	2,715
Holly	80
Homer	2,825
Lisbon	3,450
Olla	4,230
Pleasant Hill	85
Rodessa	17,685
Sarepta-Carterville	†250
Sligo	1,835
Sugar Creek	20
Urania	2,430
Zwolle	1,630
Total North Louisiana	64,380

SOUTH ARKANSAS

Atlanta	2,600
Big Creek	95
Buckner	2,785
Champagnolle	1,155
Dorcheat	1,075
El Dorado	1,650
Fouke	265
Lewisville	565
Lisbon	210
Magnolia	21,300
McKamie	620
Miller County	340
Nevada	570
Nick Springs	1,100
Rodessa	1,820
Schuler	18,600
Smackover light	1,630
Smackover heavy	13,505
Stephens	520
Troy	1,240
Urbana	1,600
Village	1,200
Total South Arkansas	74,445

*3,840 bbl. is distillate.
†Rodessa, Texas 15,915 bbl.

NORTH LOUISIANA DRILLING REPORT

Bossier Parish

Roy L. Reese et al 1 Bellevue Land Co. .....
SW SW NE 27-20-11
S.D. 3,035 ft.

Caddo Parish

R. W. Crosby 1 W. E. Glassell....NW SW NE 11-19-15
Coring 2,376 ft.
J. M. Forgetson 1 Roberts.....SE SE NW 10-22-15
5½-in. casing 2,850 ft., perf. 2,810-30 ft., flowed salt water, squeezed.

Claiborne Parish

J. D. Caruthers, Tr. 1 Simmons unit..C N½ SW 2-20-5w
Showing oil reported in 17 ft. sand 5,341-62 ft., drilling sand and shale 6,687 ft.
V. A. Hardin et al 1 Valentine....NW NW 31-20-6w
Drill stem stuck 2,800 ft., fishing 6,120 ft.
Ohio Oil 15 G. W. Taylor Acct. 1..NE SW SE 15-23-8
Drilling sand 9,935 ft.
Union Producing 1-A T. D. Meadows et al..NE 18-21-4
Top Cotton Valley 7,432 ft., coring sand 7,907 ft.
A. D. Yeary 1 J. A. Harris.....SE SW SW 17-19-6
S.D. 900 ft., repair rig.

Sugar Creek—Claiborne Parish

Sugar Creek Syndicate 2 Robinson .....
SW NW SW 33-20-5w
Set 10¾-in. casing 600 ft.

Caldwell Parish

Placid Oil Co. 1 Cross.....SE SE 18-11-3e
Drilling sand 875 ft.

De Soto Parish

R. C. Swayles 1 Jackson.....SE NW SW 36-12-14
Drilling chalk 1,432 ft.
Union Producing Co. 1-B Garrett...W½ SE 33-12-16
Drilling lime and shale 5,767 ft.

Grant Parish

Fay Oil Co. 1 Swope.....SE SE 13-9n-1w
Coring sand and shale 2,050 ft.

La Salle Parish

Peterson Pet. Corp. 1 Swope.....SE SW SE 18-9-1e
Tested salt water 1,609 ft., S.D.
O. K. Allen, Jr. et al 1 Breedlove..SE SE NW 32-11-3e
Old T.D. 2,540 ft., P.B. 2,175 ft., waiting on cement.
Peterson Pet. Corp 2 Tremont.....SE NW 25-9n-2e
Rigging up.

Lincoln Parish

C. H. Lyons 1 Dubach Lumber Co...SW NW 30-20-3w
Top massive anhydrite 3,798 ft., base 4,013 ft., coring 5,356 ft.

Red River Parish

Thornton & La Croix 1 Prudential Life Ins. Co.....
SW SW NW 31-11-9
T.D. 1,317 ft., will set casing.

Union Parish

Tiki Exploration Co. 1 Jones.....SE SE NW 30-21-3w
S.D. 3,200 ft.

ARKANSAS

Nick Springs Most Active Field

The Nick Springs field of Union County stands out as the state's most active field, with other South Arkansas oil areas currently very quiet. The field, producing from Travis Peak sand, has five wells on production and three tests drilling. The best well in the field was recompleted last week as Root Petroleum Co. brought in 1 C. T. Grace making an initial gage of 25 bbl. hourly through a 20/64-in. choke. The crude averages 39.4 gravity. Effective October 1 the Arkansas Oil and Gas Commission will place an allowable of 400 bbl. on the entire field, cutting present production approximately 50 per cent.

ARKANSAS COMPLETIONS

Troy—Nevada County

Berry Asphalt Co. 1 W. R. Mitchell SE SW SE 4-14-20
1,000,000 cu. ft. gas, open tubing, slight spray heavy oil, S.I. pressure 275 lb, T.D. 1,234 ft.

Wildcat—Pulaski County

Coker Oil Corp. 1 Huffman....NW SW SW 29-4n-11w
Dry, slight show gas 1,763 ft., T.D.

Nick Springs—Union County

Root Pet. Co. 1 C. T. Grace (recompletion)
NW SE 31-17-14
600 bbl., 20/64-in. choke, T.P. 640 lb., C.P. 1,150 lb., reperf. 3,748-46 ft., T.D. 3,988 ft.

ARKANSAS DRILLING REPORT

Clark County

W. P. Wilson 1 Hamilton-Mathews..NW SW 32-10-20
T.D. 1,572 ft., set 5⅛-in. casing 1,557 ft.

Columbia County

Louark Prod. Co. 1 Longino et al...NW SE 10-18-10
Drilling lime 6,580 ft.

Dallas County

H. H. McBride et al 1 Southern Kraft Corp.
SE SW 16-19-16
S.D., T.D. 1,088 ft.
Miller & Fletcher 1 Dierck Lumber Co. .....
SW SW 7-8s-28w
S.D. 260 ft.

Lonoke County

Lunnon Howell & Ford 1 City of Cabot
NE Lot 1, Blk. 6 18-4n-9w
S.D. 1,302 ft.

Miller County

John Coats 1 L. Ochsenbien.....SE NW 19-14-27
Drlg. 2,729 ft.

(Continued on Page 82)

By
NEIL WILLIAMS

Alta Loma Deep Test Brings In Important Frio Production

HOUSTON, Tex., Sept. 30.—The completion of a large producer in the Alta Loma field, Galveston County, and the announcement of several important locations were the highlights of development along the Texas Gulf Coast the past week.

That the Alta Loma field, Galveston County, will prove to be one of the outstanding discoveries of the year was more or less confirmed the past week by the completion of Stanolind 2 Hulen which flowed 1,214 bbl. of 36-gravity oil per day through a ¼-in. choke. Drilled as an exploratory test to a depth of 11,117 ft., and after recovering salt water in a deeper sand at 9,820-45 ft., the hole was plugged back and the well was completed in the discovery pay by perforating casing at 9,171-81 ft. The completion is significant in view of the fact that the discovery well, 1 J. A. Hulen, blew out from a depth of 9,166 ft. and flowed wild for several weeks before it was killed by a directional-drilled relief well. No. 2 is located 1,350 ft. southwest of the blowout, and while details of the sand record are not available, the initial flow indicates that it is producing from a thick section of the Frio sand, and that a field of major importance has been opened.

Glenn H. McCarthy 1 W. B. Munson, Brazoria County, is showing evidence of opening production from a deep dome at the Bailey's Prairie prospect, but due to salt-water encroachment the well is expected to be killed and retested. At the close of the week the well was flowing at the rate of 9 bbl. of fluid per hour through a 11/64-in. choke of which 55 per cent was 25-gravity oil and 45 per cent brackish water. Tubing pressure was 550 lb. This well has been in the process of completion for several weeks, and various tests at intervals from 10,755-11,500 ft., recovered gas, distillate and salt water. After making a series of cement squeeze jobs, the present test was made at 11,345-49 ft. Location is in the Samuel Carter Survey.

Ogburn Field Extended

Distillate production in the Ogburn field, Harris County, was extended about 3,200 ft. southwest as Joyce Richardson and Christian-Carpenter 1 Rorick flowed 55 bbl. of distillate in 9 hours through a ¾-in. choke from perforated casing at 6,915-29 ft. Tubing pressure was 2,450 lb. and casing pressure 2,100 lb. This is the third producer for the field, two of which are distillate producers and the other, about 3,500 ft. northwest of the discovery, produces crude oil from the Cockfield at 6,600 ft. The latter sand was tested in the Rorick well, but showed salt water.

H. C. Cockburn, who opened the first commercial production on the old Mount Houston prospect, Harris County, has staked locations for six wells, and drilling was started on 2 Burkitt, a west offset to the discovery well. The locations are all on the Burkitt lease in the James Bundick Survey.

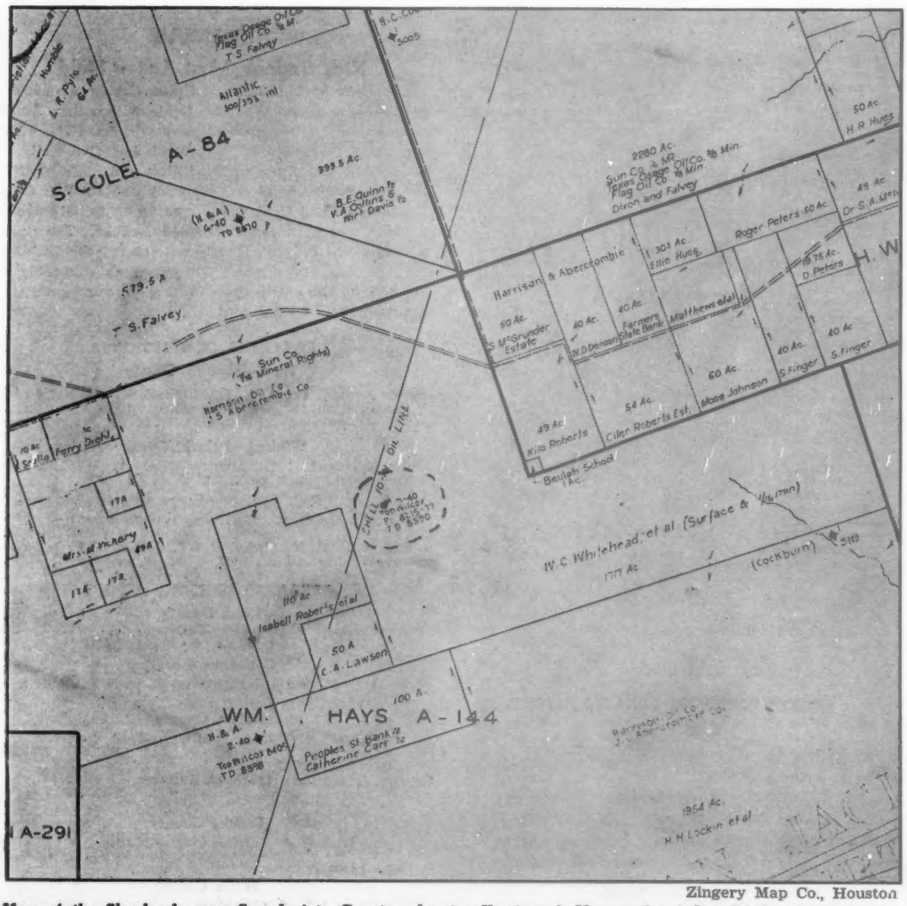
In the Lolita field, Jackson County, Shield Oil Co. and Rutherford Drilling Co. 1 Mitchell, an outpost well near the townsite of Lolita, is preparing to retest after 2 per cent oil and 98 per cent salt water was recovered on a production test at 5,932-36 ft. This well showed evidence of commercial production the previous week when drill-stem testing at intervals from 5,933-40 ft. recovered several hundred feet of pipe-line oil. The completion is important in view of the fact that a successful completion would open considerable drilling within the townsite area. The field was defined to the south as C. G. Glasscock abandoned 1 R. T. Walker at a total depth of 6,546 ft. Increased drilling activity is anticipated in the near future as W. L. Goldston prepared to drill two wells on the Missouri Pacific right-of-way which passes through the field.

Pure 1 Spacek, a wildcat located southwest of Ganado in the William Menefee Survey, Jackson County, is attracting attention as it drills below 5,900 ft. While the well is being drilled tight, it is reported that several sidewall cores cut at approximately 5,200 ft., carried an oil odor, and an electrical survey showed some indications at 5,000 and 4,900 ft. Location for another wildcat was announced by Wynn Crosby Drilling Co. for 1 Four Way ranch, a projected Frio test located in the Young Coleman Survey.

San Jacinto County Wilcox Pool

Harrison & Abercrombie 1 Sun Oil Co., completed the previous week to open another Wilcox pool and the first production in San Jacinto County, is still ungaged as the flow lines froze, and the operators are installing a series of chokes in order to lower the high gas-oil ratio. Production was obtained by perforating casing at 8,215-77 ft., and before the well was shut in it was flowing at the estimated rate of 100 bbl. of distillate per day through a 12/64-in. choke. Tubing pressure was 1,850 lb. Gravity of the oil tested 58°.

The Rowan field, Brazoria County, gained another operation as Texas Gulf Production Co. moved in material for 1 Hiram Moore, an outpost test located in the Samuel T. Angier Survey. Location for a wildcat was staked by Fred Browning on the R. R. Rogers lease, Block 22 of the Texas Real Estate Investment Co. subdivision in the C. Garrett Survey.



Map of the Shepherd area, San Jacinto County, showing Harrison & Abercrombie 1 Sun Oil Co., the discovery well of a new Wilcox pool, and its relation to dry holes drilled in the area

TEXAS GULF COAST COMPLETIONS

Chambers County

Anahuac field: Gulf 12 Knowles, 497 bbl., ¼-in. choke, top sand 7,060 ft., T.D. 7,086 ft.

Harris County

Clear Lake field: Humble 53-C West, 24 bbl. in 8 hr., ¼-in. choke, top sand 5,841 ft., T.D. 5,847 ft.
Humble 55-C West, dry, T.D. 6,050 ft.
Fairbanks field: Amerada et al 17 Foley, 132 bbl., ⅛-in. choke, top sand 6,810 ft., T.D. 6,841 ft.

Jefferson County

Fannett field: Gulf 1-E Marrs McLean, 868 bbl., ¼-in. choke, top sand 8,213 ft., T.D. 8,227 ft.
Lovells Lake field: Humble 24 Broussard, 170 bbl., ⅛-in. choke, top sand 7,812 ft., T.D. 7,814 ft.

Jackson County

Lolita field: Barnsdall 3 Lazarus, 93 bbl., 6/64-in. choke, T.D. 5,930 ft.
C. G. Glasscock 1 Walker, dry, top Discorbis 4,780-4,810 ft., Round Marginulina 5,176-5,206 ft., Flat Marginulina 5,236-66 ft., T.D. 6,546 ft.
Magnolia 4 Mitchell, 2 bbl., distillate and 38,700,000 cu. ft. gas, perf. casing 5,865-73 ft., T.D. 5,927 ft.
Skelly 3 Ward, 82 bbl., 7/64-in. choke, top Frio 5,460 ft., P.B. 5,930 ft., T.D. 5,931 ft.

Liberty County

Hull field: Guinn Crude Oil Co. 15-A Abel, 45 bbl., pumping, top sand 598 ft., T.D. 630 ft.
Hamill & Smith 1 Barngrover, 26 bbl., pumping, top sand 5,500 ft., T.D. 5,514 ft.
Esperson field: General Crude 14-B Esperson, 592 bbl., ¼-in. choke, perf. casing 6,740-50 ft., 6,690-6,700 ft., and 6,725-35 ft., T.D. 6,848 ft.
South Liberty field: Sun 59 Mitchell, 150 bbl., ¼-in. choke, top sand 1,720 ft., T.D. 1,758 ft.

Matagorda County

South Bay City field: Hamman Exploration Co. 6 Slone, 200 bbl., 15/64-in. choke, top sand 8,104 ft., T.D. 9,355 ft.

Wharton County

Hilje field: Machank Petroleum Co. 1 Brenner, gas well, T.D. 5,240 ft.
Ohio 1 Swanson, 112 bbl., 7/32-in. choke, T.D. 5,236 ft.
Texas 1 Orsak, 88 bbl., ⅛-in. choke, perf. casing 5,212-15 ft., T.D. 5,240 ft.
Withers field: McDannald Oil Co. 1-B Cockburn, 105 bbl., ⅛-in. choke, top sand 5,535 ft., T.D. 5,547 ft.
Texas 61-B Pierce, 116 bbl., ⅛-in. choke, perf. casing 5,312-16 ft. and 5,320-34 ft., T.D. 5,395 ft.

(Continued on Page 82)

Open Shallow Pool in Russell; Rice Outpost Showing Oil

By DAL DALRYMPLE

A SHALLOW-LIME pool apparently has been opened in Russell County, Kansas, while the discovery of a Simpson sand pool in Rice County seemed assured. A Pratt County outpost found oil showing in Arbuckle lime, and a Barber County wildcat had oil showing in Viola lime.

Jones & Shelbourne, Inc., 1 Lewis, SW SW NE 28-14-12w, wildcat about 6 miles southeast of Bunker Hill and 2 miles north of the Greenvale pool in southern Russell County, found an unidentified lime at 2,317-25 ft., and oil rose 1,700 ft. in the hole in a few hours. Nearest production in the Greenvale pool is from Lansing lime. Drilling was halted pending decision on whether to complete in the shallow zone or drill deeper.

Wilson, Fortier and Alpine Oil & Royalty Co. 1 Fair, CSL SE NW 10-21-9w, gave promise of opening a Simpson sand pool about ½ mile southeast of Alden, Rice County. It topped Simpson shale at 3,376 ft., had Simpson sand at 3,380 ft. and found saturation in cores to 3,390 ft. Five-inch casing was cemented at 3,380 ft. Location is on a 3,000-acre block assembled by the Alpine company last fall. Other lease holders in the area include the Carter, Continental, Shell, Texas, Phillips companies and independent operators.

Marylyn Oil Co. et al 1 Jackson, CEL NE NW 1-27-13w, outpost 1¼ miles northeast of the Iuka pool, Pratt County, topped Arbuckle lime at 4,315 ft., was bottomed at 4,339 ft., and oil rose 350 ft. in the hole in 18 hours. Operators were preparing to complete through liner set at 4,316 ft. to shut off water in Simpson sand. If successful, this will be the first Arbuckle lime production in Pratt County.

Derby Oil Co. et al 1 Hancock, C SE SE 10-32-12w, wildcat about midway between the Whelan and Medicine Lodge pools in Barber County, topped Viola lime at 4,582 ft., had oil showing at 4,583-88 ft., stainings in a core at 4,605 ft., and the crew was drilling ahead in quest of Simpson formation.

Estimated Daily Production

Estimated daily production for Kansas for the week ended September 28, and for the preceding week, was as follows:

	Barrels	
	Sept. 28	Sept. 21
Oxford City	700	700
Burrton	8,350	8,300
Ritz-Canton	4,150	4,200
Graber	2,750	2,500
Hollow-Nikkel	1,400	1,400
Lerado	1,150	700
Voshell	1,650	1,600
Wellington	1,750	1,700
Ellsworth County:		
Lorraine	1,600	1,600
Other pools	5,100	5,200
Rice-Barton counties:		
Bloomer	5,900	5,750
Chase	5,300	5,250
Geneseo	3,600	3,800
Raymond	650	850
Silica	16,550	18,400
Keesling	550	550
Wherry	3,700	4,000
Miscellaneous Barton	5,900	8,500
Trapp district	15,400	15,950
Balance Russell County	20,100	21,100
Sedgwick County	3,250	3,200
Ellis County:		
Bemis	8,650	10,450
Burnett	5,850	5,800
Miscellaneous	250	290
Kingman County	950	1,070
Stafford County	11,025	11,625
Greenwood County	8,750	8,950
El Dorado	7,400	7,450
Other fields	41,175	38,095
Total Kansas	193,550	201,700

WILDCAT REPORTS

Barber County

Derby Oil 1 John Hancock.....SE SE 10-32-12w
Show oil 4,338-52 ft., Viola 4,582 ft., show oil 4,583-85 ft., drilling 4,588 ft.

Barbara Oil 1 Angell.....NE SE 10-33-14w
Mississippi 4,689 ft., show gas 4,766-91 ft., set 7-in. casing at 4,764 ft., rigging up standard tools.

Kearny County

Stanolind 1 Judd.....SE SE 15-21-38w
At 2,859 ft., acidized with 1,000 gal., swabbed 45 bbl. water and 10 gal. oil per hr., gravity 21.6, P.B. to 3,737 ft.

Marion County

Harrington & Loriaux 1 Belton....SE SE NE 30-17-4
T.D. 2,420 ft., pumped 60 bbl. and pumped off.

Pratt County

Marylyn Oil 1 Jackson.....CEL NE NW 1-27-13w
Arbuckle 4,315 ft., show oil 4,323-27 ft., 350 ft. oil and 1,500 ft. water in hole, swabbed 1½ bbl. fluid in 2 hr.

Rice County

Alpine Oil 1 Fair.....CSL SE NW 10-21-9w
Topeka 2,475 ft., Lansing 2,948 ft., Sooy 3,230 ft., Viola 3,330 ft., Simpson shale 3,376 ft., fair saturation in Simpson sand 3,380-88 ft., set 5-in. casing 3,380 ft., rigging up standard tools at 3,388 ft.

C. L. Carlock 1 Karber.....C W½ NW NW 7-19-10w
Fort Riley 1,590 ft., Florence 1,700 ft., drilling 2,180 ft.

Russell County

Jones & Shelburn 1 Lewis.....SW SW NE 28-14-12w
Florence 1,655 ft., Woodford 1,721 ft., set 8-in. casing at 2,312 ft., drilling 2,315 ft.

Pryor & Lockhart 1 Borrel.....C N½ NE SE 3-15-11w
Drilling 1,415 ft.

Stafford County

Selby Oil & Gas 1 Blackburn....CEL SE NE 13-24-12w
Fort Riley 1,840 ft., Florence 1,945 ft., Topeka 2,960 ft., Lansing 3,450 ft., drilling 3,690 ft.

FIELD COMPLETIONS

Barton County

Hoffman pool: Black-Marshall Oil 1 Krier, SW SW NW 18-16-11w. Pumped 10 bbl. an hour, Arbuckle 3,306-09 ft., T.D.

Silica pool: I. T. I. O. 4 Bryant, N½ NW SE 23-20-11w. Swabbed 70 bbl. in 1 hr., depthograph potential 3,395 bbl., Arbuckle 3,262-72 ft.

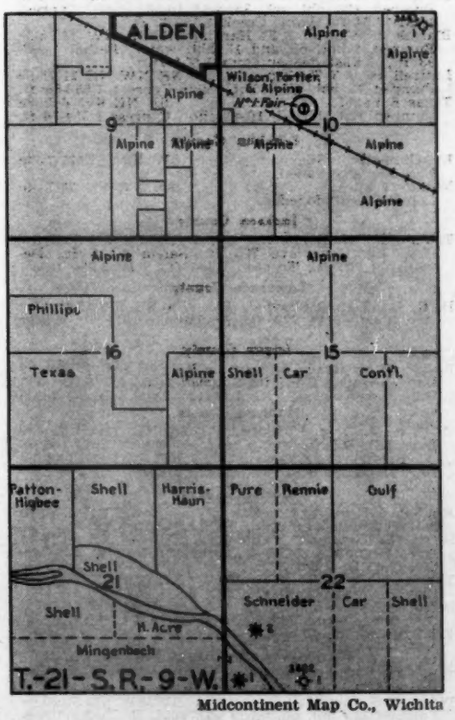
Trapp pool: Texas 10 Hoffman, S½ SE NW 6-16-13w. 3,000 bbl., maximum allowable potential, 1,500 gal. acid, Arbuckle 3,332-47 ft., T.D.

Sharon Drlg. 3 Luerman, N½ NE SE 18-16-13w. Pumped 23 bbl. in 8 hr., potential 68 bbl., 3,000 gal. acid, Arbuckle 3,384-92 ft., T.D.

Shell 6 Ehrlich, SW SE NW 18-16-13w. Swabbed 236 bbl. oil and no water in 5 hr. after 2,000 gal. acid, potential 921 bbl., Arbuckle 3,347-62 ft., T.D.

Butler County

Wildcat: Gralapp et al 1 Wilhite, NE NE SW 17-27-7. Dry, T.D. 2,730 ft., Kansas City 2,016 ft., Bartlesville 2,630 ft., Mississippi 2,714 ft.



Midcontinent Map Co., Wichita

Wilson, Fortier and Alpine Oil & Royalty Co. 1 Fair, 10-21-9w, wildcat near Alden and 2 miles north of the Wellman gas pool, had oil showing in Simpson sand at 3,380-90 ft., and 5-in. pipe was set on top of the formation, preparatory to testing

Eckel pool: Vern McDaniels 2 Eckel, SW NE NW 7-27-7. Dry, T.D. 2,340 ft., Kansas City 2,063 ft., Lansing 2,085 ft.

Brandt pool: Rex & Morris 1 Whitmer, NW SE SE 16-28-7. Pumped 186 bbl. in 8 hr., potential 557 bbl., 2,000 bbl. acid, Mississippi 2,663-87 ft., T.D.

Haverhill pool: Cromwell & Lewis 1 Reetz, SE cor. 34-27-5. 34 bbl., Viola 3,907-3,100 ft., T.D.

Douglas pool: Daryl Oil 1 Creed, SE SE SW 17-29-4. 18 bbl., Lansing 1,858-1,903 ft., T.D.

Elbing pool: National Refining 16 North Lathrop, SE NE NW 17-23-4. 20 bbl., 5,000 gal. acid, Kansas City 1,925-2,096 ft., T.D.

Cowley County

West Ferguson pool: Winkler-Koch 10 Ferguson, SW NW SE 21-30-8. 15 bbl., 2,000 gal. acid, Kansas City 2,169-73 ft., T.D.

Wilson pool: Atlantic 1 Moyer, NE NW SE 9-33-6. Dry, T.D. 3,503 ft., Mississippi 3,081 ft., base Mississippi 3,435 ft., Arbuckle 3,492 ft.

Ellis County

Bemis pool: Champlin Refining 1 Hadley, S½ SW SE 17-11-17w. 3,000 bbl., maximum allowable potential, Arbuckle 3,390-34 ft., T.D.

Cities Service 15-B Hall, NE NE SW 26-11-17w. 3,000 bbl., maximum potential, 1,500 gal. acid, Arbuckle 3,408-82 ft., T.D.

Burnett pool: Nadel & Gussman 1 Carmichael, E½ E½ NE 11-11-18w. Swabbed 35 bbl. in 1 hr., maximum potential 3,000 bbl., 1,500 gal. acid, Arbuckle 3,410-12 ft., T.D.

Ellsworth County

Edwards pool: Continental 5 Steinberg, SW NW NW 27-17-8w. Pumped 100 bbl. in 8 hr., potential 299 bbl., 1,000 gal. acid, Arbuckle 3,202-37 ft., T.D.

Stoltenberg pool: Gulf 3 Svoboda, W½ NE SE 8-16-10w. Pumped 47 bbl. oil and 140 bbl. water in 8 hr., potential 143 bbl., Arbuckle 3,317-37 ft., T.D.

Stanolind et al 2 Stoltenberg, N½ SW NW 27-16-10w. Swabbed 42 bbl. per hr. after treatment of 1,500 gal., depthograph potential 3,080 bbl., Arbuckle 3,295-3,306 ft., T.D.

Wilkens pool: Vickers Pet. 1 Peterman, N½ NE NE 14-17-10w. 48 bbl., Arbuckle 3,265-67 and 3,280-82 ft., T.D. 3,286 ft.

Greenwood County

Severy pool: Coulter & Janney 1 Blanchard, NE NE SW 8-28-11. Dry, T.D. 1,250 ft., Kansas City 1,065 ft.

Jefferson County

McLoud pool: Stark et al 1 Ragan, N½ NW NE 4-10-20. Dry, T.D. 1,665 ft., Lansing 452 ft., McLoud sand 1,459 ft., Mississippi 1,488 ft.

McPherson County

Roxbury pool: Westgate-Greenland 3 Henne, W½ SW SE 18-17-1w. Pumped 268 bbl. in 8 hr., potential 805 bbl. and no water, 1,500 gal. acid, Mississippi 2,653-75 ft., T.D.

Bornholdt pool: Tulsa Oil Corp. 1 Nelson, E½ SW NE 19-20-5w. Flowed 85 bbl. an hr., maximum potential 3,000 bbl., Mississippi 3,287-3,334 ft., T.D.

Pratt County

Cunningham pool: Skelly 2 Lakin, W½ NW NE 36-27-11w. Flowed 93 bbl. in 8 hr. after 7,000 gal. acid treatment, potential 278 bbl., Lansing 3,441-3,503 ft., T.D.

Rice County

Wherry pool: Garden & Spencer 4 Hauschild, N½ NE SE 15-21-7w. Swabbed 100 bbl. a day, depthograph potential 1,232 bbl., Sooy 3,380-92 ft., T.D.

Bornholdt pool: Central Pet. 2 Snyder, N½ NE SE 12-20-6w. Flowed 45 bbl. in 1 hr., maximum potential 3,000 bbl., Mississippi 3,338-71 ft., T.D.

Russell County

Trapp pool: Shell 6-A Balt, NW NE SE 35-15-14w. Swabbed 346 bbl. in 6 hr., maximum allowable potential 3,000 bbl., Arbuckle 3,338-52 ft., T.D.

Gurney pool: Cities Service 2 Strecker, W½ NW NE 36-14-14w. Pumped 149 bbl. in 8 hr., cutting 20 per cent, potential 448 bbl., Lansing 2,900, 2,920, 2,955, 2,971, 3,131 ft., T.D. 3,173 ft.

Stafford County

Zenith pool: Transwestern 4 Johnson, W½ SW SE 3-24-11w. Flowed 180 bbl. an hr., maximum potential 3,000 bbl., Viola 3,714-71 ft., T.D.

Landon & Estes 2 Equitable, W½ NE NE 15-24-11w. Flowed 18 bbl. an hr., 5,000 gal. acid, bomb potential 2,332 bbl., Viola 3,790-3,825 ft., T.D.

South Sitner pool: Helmerich & Payne 1 Krug, W½ NW SW 2-22-12w. Swabbed 30 bbl. an hr., depthograph potential 2,933 bbl., 9,000 gal. acid, Arbuckle 3,589-98 ft., T.D.

Forest City Basin

ST. JOSEPH, Mo., Sept. 30.—Newest producer in the Falls City, Neb., pool is R. L. Campbell et al 2 Schock, NW NE 29-1n-16e, which extended the pool ½ mile southward and to within 1¾ miles of the Kansas line. It was being swabbed at the rate of 30

(Continued on Page 72)

By
STAFF CORRESPONDENT

Biggest Well in Some Weeks In Lower McClosky at Albion

MATTOON, Ill., Sept. 30.—Activity slackened off slightly from the previous week and 65 oil wells and 19 dry holes were completed. Of the 65 producers, 10 were in Louden and 13 were in Salem. The Louden producers averaged only 65 bbl. while those in Salem averaged 290 bbl. Outside of the two main fields, the other 42 producers had an average initial production of 315 bbl. These figures give an excellent idea of the decline of Illinois' position in the oil industry as they compare with a state-wide average of over 700 bbl. initial production as late as July.

To take the place of the 84 completions, there were 67 wells started. There are now 98 wildcats under way and 219 wells in more settled areas, making a total of 384 operations.

Lower McClosky Production in Albion Pool

The big event of the past week was the completion of Tuesday 2 Works, NE NE SE 13-2s-10e, Edwards County, for 165 bbl. an hour in the lower McClosky. The success of this well will result in the deepening of the other wells in the pool.

Connecting links were near completion between Salem and Tonti in Marion County and also between the Zif Township pool in Wayne and Clay City. The former link was established by Texas 1 Paul Chance, NW SW 4-2n-2e, which was swabbing 1 bbl. an hour prior to acidization. Duncan 1 Barnes, 20-2n-8e, is the other link well. It is making 165 bbl. on the pump.

Trenton Tests

There were three Trenton tests under way, and all of them are nearing critical levels. Borton 1 Storer, SW NW NE 13-1n-1w, was formerly hailed as the discoverer of Silurian oil. This has fizzled out, however, and the well is reported below 3,900 ft. Martin 1 Robinson in 4-2n-1e, in the Sandoval pool is also reported near the Trenton, below 4,200 ft. This well previously discovered the Devonian production which started the state's biggest boom. In the Fairman pool, also in Marion County, Shell 6-C Ververs, E½ SE NW 18-3n-1e, found the Devonian dry and is headed for the Trenton at 3,850 ft.

Prospective Pool Openers

Of the four prospective pool openers, reported on last week, the Chance well has already been mentioned. Neff 1 Garner, SE SE SE 36-4s-10e, was preparing to test a showing in the Aux Vases at 2,972 ft. Arrow et al 1 J. C. Hon was testing Rosiclare saturation at 2,863-71 ft., at SE NE NE 5-4s-14w, and McBride 1 Hon was testing the McClosky at 2,886-2,905 ft. The two Effingham County wells, Erwin & Barr 1 Dammerman, NW NW SW 18-8n-4e, and Troop 1 LeCrone NW NW SW 7-8n-4e, were making a small amount of oil on the pump, the former 22 bbl. and the latter 42 bbl. and some water in 21 hours. Neither appears likely to create much excitement.

ILLINOIS COMPLETIONS

Bond County

Kingwood 1 Gaffney.....SW SE NE 30-6n-3w
Dry, Salem 1,211 ft., Osage 1,437 ft., Louisiana 1,949 ft., Devonian 2,070 ft., Dutch Creek 2,132 ft., T.D. 2,181 ft.
Magnolia 3 W. H. Grigg.....SE SE SE 4-6n-2w
Pumped 28 bbl. oil and 24 bbl. water, 10-qt. shot, Benoist 1,029-32 ft.

Clinton County

Kistler & Strawsey 1 Barry.....SE SW NW 22-1n-1w
Dry, Cypress 1,302 ft., T.D. 1,511 ft.
Blalock 2 Brameier.....SE NE SW 2-1n-2w
Dry, Benoist 1,332 ft., T.D. 1,344 ft.
Benoist 3 Knolhoff.....SW NE NW 11-1n-2w
Dry, Benoist 1,318 ft., tested Cypress 1,208-20 ft., T.D. 1,394 ft.
D. Duncan 9 K. Knolhoff.....NE NW NW 11-1n-2w
Pumped 45 bbl. oil, 1-qt. shot, Benoist 1,318-21 ft.
Jacobsen 4 Knolhoff.....NE SE NW 11-1n-2w
Pumped 25 bbl. oil and 5 bbl. water, 1-qt. shot. Cypress 1,210-12 ft.
P. Moseback 1 B. Wilkin.....NE NE NW 9-1n-3w
Pumped 15 bbl. oil and 25 bbl. water, 3,000 gal. acid, Devonian 2,438-53 ft.
Acadia Royalty 1 Brameier.....SE SW SW 11-1n-2w
Pumped 20 bbl. oil, Benoist 1,317-22 ft.

Edwards County

Superior 4 M. Works.....SE SW NW 18-2s-11e
Flowed 900 bbl. oil, 5,000 gal. acid, McClosky 3,095-3,111 ft.
Superior 7 G. Works.....S½ SW SW 18-2s-11e
Flowed 200 bbl. oil, 2,000 gal. acid, McClosky 3,085-94 ft., T.D. 3,099 ft.
Superior 6 G. Works.....SW NW SW 18-2s-11e
Flowed 200 bbl. oil, 5,000 and 5,000 gal. acid, McClosky 3,074-86 ft., 3,143-46 ft., and 3,160-67 ft., T.D. 3,173 ft.
Tuesday 2 Works.....NE NE SE 13-2s-10e
Flowed 3,600 bbl. oil, 1-in. tubing choke, 4,000 gal. acid, McClosky 3,104-13 ft. and 3,174-93 ft.
Whisenant & Trenchard 1 A. Dunk.....NW SW SE 36-2s-10e
Dry, Menard 2,335 ft., Waltersburg sand 2,445-60 ft., Tar Springs sand 2,480-2,530 ft., T.D. 2,550 ft.
Jarvis Bros. 2 C. Green.....S½ NE SE 24-2s-10e
Location abandoned.

Fayette County

G. Muhlback 1 Eberhardt.....NE SW NW 6-5n-6w
Dry, Glen Dean 1,457 ft., Cypress sand 1,615-26 ft. (water) and 1,631-46 ft. (slight show oil), T.D. 1,652 ft.
Forest 1 B. D. Paine.....NE NE NW 27-4n-1w
Dry, Aux Vases 1,523 ft., Ste. Genevieve 1,580 ft., St. Louis 1,714 ft., T.D. 1,734 ft.

Fayette County—Louden Field

Carter 2 Phillips-Wood.....SE SW SW 36-9n-3e
Pumped 30 bbl. oil, 20-qt. shot, Cypress 1,556-64 ft., T.D. 1,566 ft.
Carter 3 B. Algood.....NE NW NW 2-8n-3e
Pumped 108 bbl. oil, 25-qt. shot, Cypress 1,504-10 ft., T.D. 1,535 ft.
Carter 13-6 F. Doty.....SE SE SE NW 13-8n-3e
Gas input, Cypress sand 1,477-58 ft., T.D. 1,488 ft.
Carter 4 Willie Gregg.....SW NW SE 13-8n-3e
Pumped 84 bbl. oil, 20-qt. shot, Cypress 1,515-38 ft.
Carter 13-7 Kagy-Cramer.....NE NE NE SW 13-8n-3e
Gas input, Cypress 1,501-25 ft.
Carter 2 O. Workman.....NE SE SW 13-8n-3e
Pumped 54 bbl. oil, 10-qt. shot, Cypress 1,502-27 ft.
Stewart 3 L. Logue.....NE NW NE 34-8n-3e
Dry, Cypress sand 1,590-95 ft., T.D. 1,598 ft.
Carter 7 M. E. Finch.....NW NW SW 4-7n-3e
Pumped 24 bbl. oil and 15 bbl. water, 10 and 20-qt. shots, Cypress 1,502-44 ft., Paint Creek 1,574-92 ft., T.D. 1,595 ft.
Carter 4 G. R. Owen.....NE SE SW 8-7n-3e
Pumped 22 bbl. oil, 30, 40, and 20-qt. shots, Cypress 1,485-1,532 ft., Paint Creek 1,555-70 ft., Benoist 1,591-1,602 ft.
Carter 8 W. Hawkins.....NE NE SW 17-7n-3e
Pumped 120 bbl. oil, 35 and 10-qt. shots, Cypress 1,481-1,524 ft., Paint Creek 1,555-72 ft.
Blalock & Walters 1 F. Harding NE SE NW 18-7n-3e
Pumped 4 bbl. oil and 15 bbl. water, Bethel 1,587-93 ft., drilled deeper from 1,504 ft.
Luttrell et al 3 Tucker.....NE NW NE 21-7n-3e
Pumped 75 bbl. oil, 20-qt. shot, Cypress 1,556-66 ft.
Texas 8 Yakel.....SE NE SW 6-6n-3e
Pumped 126 bbl. oil, 10-qt. shot, Cypress 1,554-76 ft.

Franklin County

Brischmieder 1 Siles.....SW NW SE 27-7s-4e
Location abandoned.
Manley 1 Siles.....SE NW SE 27-7s-4e
Location abandoned.

Jackson County

Trumbull 1 H. Bennett.....S½ S½ SE 35-8s-5w
Dry, Ste. Genevieve 725 ft., Salem 1,115 ft., Devonian 1,950 ft., Trenton 2,755 ft., T.D. 2,950 ft.

Lawrence County

H. G. Bowman 2 Shaw.....SE SE 13-4n-11w
Dry, Bridgeport 722 ft., Buchanan 1,018 ft., water 1,076-77 ft.

Logan County

Bay 1 G. M. Lake.....NE NE SW 11-20n-2w
Dry, Devonian 1,502 ft., Silurian 1,503 ft., T.D. 1,535 ft.

Madison County

B. G. & M. Drlg. 1 Isenberg.....SE NE NW 21-5n-6w
Dry, T.D. 305 ft.
C. E. Baldwin 1 Daiber.....NE SE NE 23-5n-6w
Dry, Devonian 1,875 ft., T.D. 1,913 ft.

Marion County

Menhall 5 Benoist.....NE NE NW 8-2n-1e
Salt-water disposal well, T.D. 1,640 ft.
Haynes & Thomas 2 Wallace.....SE NE NE 36-2n-1e
Dry, Devonian 3,477 ft., perf. 2,072-77 ft. in McClosky, T.D. 3,536 ft.
Thompson Drlg. Co. 2 Craig.....NE NE NE 36-2n-1e
Dry, Devonian 3,481 ft., T.D. 3,571 ft.
Petro O. & G. 1 Kimsey.....NE SE NW 30-1n-1e
Dry, Petro sand 763 ft., Cypress 1,376 ft., H.F.W., T.D. 1,508 ft., 17-yr.-old Petro well.

Marion County—Salem Field

Texas 18-C Kleinschmidt.....NE NE NW 28-2n-2e
Pumped 108 bbl., 5-qt. shot, Benoist 1,859-64 ft.
Texas 27 J. Canull.....SW SW SE 31-2n-2e
Pumped 215 bbl. oil, 5,000 gal. acid, McClosky 1,890-1,900 ft., 1,905-10 ft., and 1,932-40 ft., Salem 2,148 ft., T.D. 2,190 ft.
Texas 29 J. Canull.....SW SW SE 31-2n-2e
Gas input, T.D. 1,797 ft.
Texas 16 C. E. Richardson.....SE NE SW 4-1n-2e
Pumped 133 bbl. oil, 3,000 gal. acid, McClosky 2,075-85 ft., T.D. 2,095 ft.
Texas 77 City of Centralia.....SW SW NE 5-1n-2e
Flowed 408 bbl. oil, 105-qt. shot, Benoist 1,729 ft., Aux Vases 1,799 ft., T.D. 1,866 ft.
Texas 35 L. Hawthorn.....NE SW SE 5-1n-2e
Pumped 210 bbl. oil, 100-qt. shot, Benoist 1,751 ft., Aux Vases 1,806 ft., T.D. 1,877 ft.
Texas 13 C. E. Richardson.....SE NE SE 5-1n-2e
Pumped 112 bbl. oil, 3,000 gal. acid, McClosky 1,982-92 ft., and 2,012-44 ft., T.D. 2,095 ft.
Texas 17 H. Small.....NE NW NE 5-1n-2e
Pumped 196 bbl. oil, 5,000 gal. acid, McClosky 1,932 ft., Salem 2,185 ft., T.D. 2,251 ft.
Texas 7 V. L. Foster.....NW NE SE 7-1n-2e
Flowed 400 bbl. oil, 50-qt. shot, Devonian 3,407 ft. and 3,433-52 ft., T.D. 3,496 ft.
Texas 8 V. L. Foster.....NW NW SW 8-1n-2e
Flowed 1,020 bbl. oil, 40-qt. shot, Devonian 3,455 ft. and 3,473-83 ft., T.D. 3,520 ft.
Texas 10 W. D. Fyke.....SW NW SE 8-1n-2e
Pumped 14 bbl. oil, 3-qt. shot, Aux Vases 1,907-10 ft., T.D. 1,913 ft.
Texas 22 B. Hawkins.....SE NE NW 8-1n-2e
Flowed 455 bbl. oil, 50-qt. shot, Devonian 3,460-3,500 ft., T.D. 3,536 ft.
Texas 22 B. Hawkins Comm.....NE SE NW 8-1n-2e
Flowed 378 bbl. oil, Devonian 3,460-3,500 ft., T.D. 3,536 ft.
Texas 83 City of Centralia.....SW NW SW 4-1n-2e
Pumped 115 bbl. oil, 3,000 gal. acid, McClosky 2,021-50 ft. and 2,080-85 ft., T.D. 2,087 ft.

Richland County

Pure 2 G. Kernickle.....E½ SW SW 32-5n-10e
Flowed 378 bbl. oil, 5,000 gal. acid, McClosky 2,840-45 ft., T.D. 2,850 ft.
Texas 2 W. Winter.....E½ SW NE 27-4n-10e
Swabbed 33 bbl. oil, 1,500 gal. acid, 68 bbl. oil and 4 bbl. water, 4,000 gal. reacid, McClosky 3,059-80 ft.
J. J. Broadus 1 D. W. Blain.....NE SW NE 24-4n-9e
Pumped 19 bbl. oil and 4 bbl. water, 30-qt. shot, Cypress 2,577-90 ft.
Al Stengle 1 Davenport.....E½ SE NE 13-3n-9e
Dry, Glen Dean 2,412 ft., Cypress 2,575 ft., Ste. Genevieve 2,914 ft., Fredonia 2,959 ft., T.D. 2,985 ft.

Wabash County

Mohawk and Big Chief 3 Seibert NE NE SW 34-2n-13w
Flowed 450 bbl. oil through casing, 365 ft. tubing, 3,000 gal. acid, McClosky 2,673-80 ft., T.D. 2,682 ft.
T. M. Barnes 1 Wright.....SW NW SW 8-1n-12w
Pumped 59 bbl. oil, 40-qt. shot, Biehl 1,524-33 ft., T.D. 1,560 ft.
Leighty 3 Litherland.....SW SW NW 8-1n-12w
Pumped 250 bbl. oil, 60-qt. shot, Biehl 1,511-55 ft., T.D. 1,555 ft.
O. Meara 1 Gould.....NW NE SE 17-1s-12w
Pumped 72 bbl. oil, Cypress 2,022-26 ft. and 2,034-48 ft., T.D. 2,053 ft.
B. Lambert 1 Kolb.....SW SE SE 23-1s-13w
Dry, Menard 1,830 ft., Vienna 1,935 ft., Tar Springs 1,938 ft., Glen Dean 2,065 ft., Cypress 2,282 ft., Ste. Genevieve 2,550 ft., T.D. 2,647 ft.
Yingling 2 Seiler.....SE SW SW 26-1s-13w
Pumped 150 bbl. oil and 30 bbl. water, McClosky 2,632-36 ft. and 2,648-54 ft.
Tide Water 2 Seiler.....NE NW NW 35-1s-13w
Pumped 100 bbl. oil and 2 bbl. water, McClosky 2,629-38 ft. and 2,648-54 ft.
Duncan 1 Helm.....SE SE NW 15-3s-14w
Pumped 120 bbl. oil and 15 bbl. water.
W. W. Gray 2 fee.....NE SW SE 14-3s-14w
Flowed 450 bbl. oil, Cypress 2,474-2,502 ft.

Washington County

Gardner 1 Frederking.....NE NW SW 28-2s-3w
Dry, Menard 800 ft., Glen Dean 937 ft., Cypress sand 1,165 ft., Benoist 1,308 ft., T.D. 1,326 ft.
L. Horton 4 T. Kosuzek.....NE SW SW 28-3s-3w
Pumped 25 bbl. oil and 35 bbl. water, 10-qt. shot, Benoist, T.D. 1,273 ft.

Wayne County

Pure 3 J. W. Barth-A.....N½ N½ N½ 5-1n-8e
Flowed 603 bbl. oil, McClosky 3,015-19 ft. and 3,027-30 ft., T.D. 3,095 ft.
Pure 1 Horton-Feller.....NE SE NW 5-1n-8e
Flowed 859 bbl. oil, 5,000 gal. acid, McClosky 3,028-34 ft. and 3,038-42 ft., T.D. 3,110 ft.
Pure 1 J. S. Hubble-A.....E½ SE SE 5-1n-8e
Pumped 206 bbl. oil, 5,000 gal. acid, McClosky 3,030-33 ft., T.D. 3,100 ft.
Texas 1 S. Miller-B.....E½ SW SE 5-1n-8e
Flowed 160 bbl. oil, 5,000 gal. acid, McClosky 3,032-35 ft., T.D. 3,095 ft.
Pure 1 A. Trotter.....E½ NE SW 5-1n-8e
Pumped 205 bbl. oil, 5,000 gal. acid, McClosky 3,028-40 ft., T.D. 3,100 ft.
Roach & Voyles 3 Carlson-B.....NE NW SW 3-2s-7e
Pumped 97 bbl. oil in 16 hr., 5,500 gal. acid 3,238-44 ft., T.D. 3,247 ft.
Muhlbach 1 J. Cunningham.....SE NW SW 4-2s-7e
Pumped 384 bbl. oil, 3,000 gal. acid, McClosky 3,301-15 ft.
J. Myers 1 Covington.....SW SW SW 4-2s-7e
Pumped 238 bbl. oil, 5,000 gal. acid, McClosky 3,296-3,304 ft.
Scott 3 Cormick.....NE SW SW 4-2s-7e
Pumped 188 bbl. oil, 3,000 gal. acid, McClosky 3,298-3,313 ft., T.D. 3,334 ft.
Robinson 1 J. Felix.....SE NE SW 26-2s-8e
Pumped 103 bbl. oil, 4,000 gal. acid, McClosky 3,362-71 ft., 3,381-91 ft., and 3,403-08 ft., T.D. 3,420 ft.
J. Myers 2 Covington.....SW SW SW 4-2s-7e
Location abandoned.
Merrill 1 Kerney.....NW NE NW 9-2s-7e
Location abandoned.
C. Robinson 1 R. Bonner.....SW NW SE 26-2s-8e

(Continued on Page 76)

Hughes Wildcat Tests Wilcox Sand; Start Other Outposts

By
DAL DALRYMPLE

SEVERAL new wildcat tests were started in Oklahoma the past week, including important outposts in Hughes, Lincoln and Woods counties. A small pool opener in Lincoln County was completed, an Okfuskee County wildcat had showings of oil in shallow zones and a Payne County outpost was scheduled to test showings in Hunton lime.

Magnolia Petroleum Co. 1 McKoy, SW SW SE 16-5-11, will explore deep horizons in an area between Stuart and Calvin in Hughes County. Location is on a structure estimated to cover 6000 acres, all of which is under lease by Magnolia and other operators. The Stanolind and Amerada companies have the west offset tract, and other nearby acreage is held by Magnolia, Texas, Continental, Carter, Gulf, Phillips, Mid-Continent, H. L. Wirick and other operators. Wilcox sand is expected at around 6,000 to 6,500 ft. Location is west of an old gas area in Section 15. Extensive seismograph exploration has been done in the district.

Drilling was started at Gulf Oil Corp. 1 Hess, C NE NW 33-23-13w, wildcat near Galena, Woods County, in northwestern Oklahoma. Location is on a seismograph block of more than 10,000 acres.

Two outposts in the Prague area, southern Lincoln County, were started. H. L. Berkey and others' test just east of Prague townsite and northeast of the Prague pool set 10-in. pipe at 500 ft. Mohican Drilling Co. et al 1 Hoffman, 18-12-6, northwest of Prague, set surface pipe at 70 ft.

Fred Phillips et al 1 Leonard, SW SE NW 11-13-7, wildcat near Micawber in Okfuskee County, was drilling ahead toward contract depth of 3,500 ft. after finding oil showing in shallow pay zones. It had a good showing of oil in Oswego lime topped at 2,597 ft., and in Prue sand topped at 2,606 ft. If the Dutcher series fails to pay off, operators were expected to plug back and test upper showings.

Another attempt to develop Wilcox sand production in the West Stillwater pool, Payne County, apparently had failed as operators prepared to complete J. E. Crosbie, Inc. 1 Murphy, NE NE SW 20-19-2, in Hunton lime. It had oil showing in the upper part of Wilcox sand topped at 4,696 ft., total depth 4,712 ft. After running an electrical log operators decided not to test the Wilcox for fear of water encroachment. Pipe was set preparatory to testing Hunton lime, where oil was showing. The discovery well was completed as a Hunton producer after water was found in lower Wilcox sand.

WILDCAT COMPLETIONS

Beckham County: McLaughlin 1 Harrington, C SW SE 26-9-25w. Granite wash 2,870-2,906 ft., T.D., dry.

Creek County: Indo Oil 1 Slick, NW NW NW 1-16-9. Dutcher 2,919-22 ft., T.D., P.B. 1,375 ft., dry.

Lincoln County: Wilcox O. & G. 1 Murphy, NE SE SW 7-14-6, opened East Davenport pool, between Davenport and Sac and Fox pools. Prue 3,20s-3,268 ft., T.D., shot with 220 qt. at 3,200-3,268 ft., pumped 9 bbl. of 46-gravity oil and 13 bbl. water.

Okfuskee County: W. L. Graham 1 McLain, SE SW SW 7-12-7. Prue 2,949 ft., T.D. 2,960 ft., dry.

Payne County: Link Oil et al 1 Krolop, SW SW SE 14-17-5. Bartlesville 3,522-26 ft., lime 3,540-42 ft., shale 3,551-74 ft., T.D., dry.

Pottawatomie County: Miller 1 Buckner, SE SE NE 20-10-8. Booch 3,175 ft., Cromwell 3,605 ft., T.D. 3,621 ft., dry.

Stephens County: Grimes & Vaughn 1-A Baker, SE NW NW 35-2s-6w. Sand 1,101-24 ft., T.D. 1,418 ft., dry.

Arrow Drilling 1 Stallings, SW SW SW 18-3s-4w. T.D. 1,248 ft., dry.

FIELD COMPLETIONS

Caddo County

Cement field: Magnolia 1 Ginrich, SE NW NW 6-5-9w. Old well deepened from 2,385 ft. to Noble-Olson sand 3,308-20 ft., set 7-in. casing 3,305 ft., T.D. 3,362 ft., pumped 10 bbl.

Carter County

Hewitt field: Gibson et al 5 Hoover, SW SW SE 20-4s-2w. Sand 2,254-81 ft., set 7-in. 2,252 ft., T.D. 2,298 ft., shot 25 qt. at 2,272-82 ft., pumped 55 bbl.

Gibson et al 5 Walker, CNL S½ NE 20-4s-2w. Set 7-in. 2,168 ft., T.D. 2,221 ft., shot 50 qt. at 2,198-2,221 ft., flowed 565 bbl. through tubing.

Kerbow et al 1-A McKee, NE SW SW 20-4s-2w. Sand 2,146 ft., T.D. 2,197 ft. in sandy shale, pumped 75 bbl.

Gibbons 1 Harrell, NW NE SW 20-4s-2w, old well deepened from 1,740 ft., sand 1,885-98 ft., T.D. 2,055 ft., P.B. 1,725 ft., shot, pumped 9 bbl.

Comanche County

Lawton field: Kelly 1-A Bohner, NE NE NE 35-2n-11w. T.D. 230 ft., dry.

Kelly 2-A Bohner, NW NE NE 35-2n-11w. T.D. 240 ft., dry.

Creek County

Glenn pool: Sinclair Prairie 33 Kiefer, CSL NW SE 17-17-12. T.D. 1,542 ft., pumped 30 bbl.

Lincreek area: Brauer 1 Taylor, C NW SE 31-16-7. Sand 1,155-63 ft., gaged 34,400,000 cu. ft. gas.

Mannford area: Sidwell 1 Means, NE NW NW 36-19-8. Skinner 2,226-56 ft., T.D. 2,379, ft. P.B. and shot. dry.

Grady County

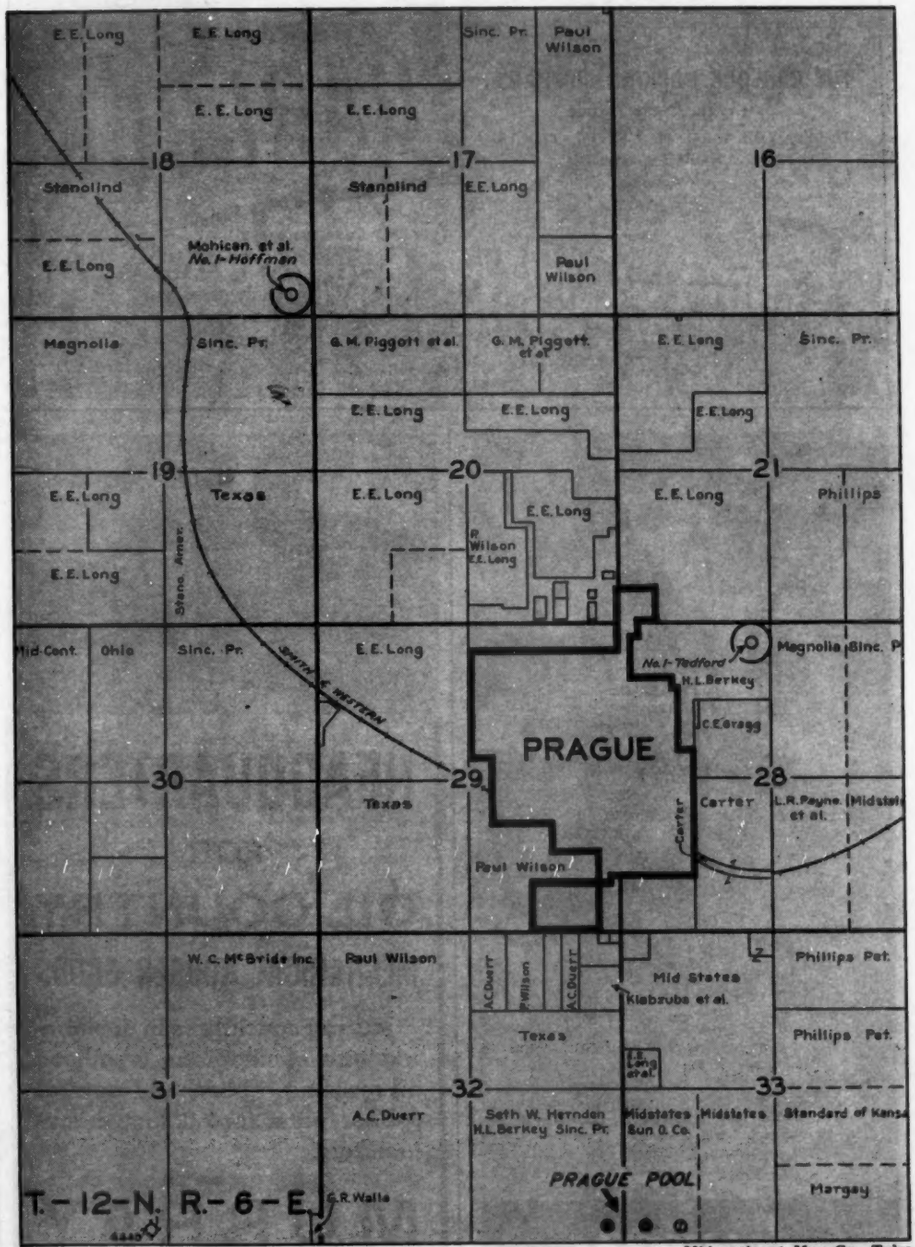
Knox field: Critchlow & Adair, NW SW NW 27-3n-5w. Set 7-in. 2,708 ft., T.D. 2,713 ft., perforated 2,419-2,650 ft., pumped 2 bbl. oil and 3 bbl. water.

Jackson County

Altus field: Burnham 1-A Hensley, SW SW NW 10-1n-20w. Set 7-in. 1,410 ft., T.D. 1,585 ft., pumped 75 bbl.

Le Flore County

Norris area: Leflore Gas & Electric 1 Morrison, CSL



Midcontinent Map Co., Tulsa

Work has started at two wildcats northeast and northwest of the Prague pool, Lincoln County. H. L. Berkey et al 1 Tedford, NE NE NW 28-12-6, is less than ½ mile from Prague townsite and about 2 miles northeast of the Prague pool, straddling the Lincoln-Pottawatomie county line. Mohican Drilling Co. et al 1 Hoffman, SE cor. 18-12-6, is about 1½ miles northwest of Prague

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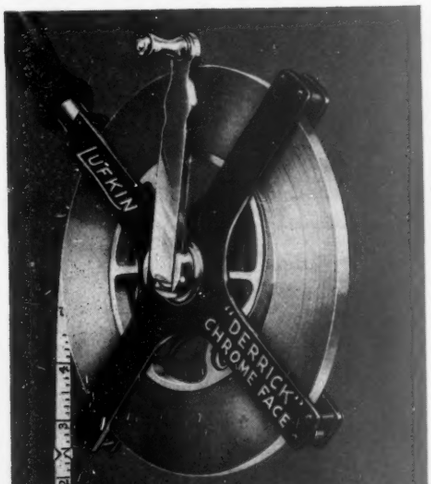

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SE SW 31-7-23e. Sand 1,864-1,947 ft., T.D. 2,120 ft., dry.

Lincoln County

Laffoon area: Mid-Continent 3 School Land, C SW NE 16-13-6. Hunton 4,028 ft., set 7-in. 4,031 ft., T.D. 4,058 ft., acidized 3,000 gal., gaged 12,750,000 cu. ft. gas.

Okfuskee County

Gregory area: Wells 6 Scott, SW NW NE 25-10-11. Sand 2,029-52 ft., T.D., set 6-in. 1,950 ft., P.B. 2,048 ft., pumped 8 bbl. oil and 1 bbl. water.

Oklahoma County

Oklahoma City field: Phillips Pet. 1 Sabin, SW NW NE 34-12-3w. Set 7-in. 6,356 ft., Simpson 6,359 ft., Wilcox 6,391 ft., T.D. 6,606 ft., shot 190 qt. at 6,534-6,606 ft., pumped 1,111 bbl. in 24 hr.

Estimated Daily Production

Estimated daily production in Oklahoma for the week ended September 28, and for the preceding week, was as follows:

	Barrels	
	Sept. 28	Sept. 21
Allen	5,175	5,200
Billings	6,100	6,050
Burbank	7,250	7,200
South Burbank	8,000	7,950
Balance Osage	17,600	17,750
Blackwell district	3,375	3,350
Bristow-Slick	5,950	5,800
Chandler	1,100	1,075
Crescent	1,800	1,850
Cromwell	2,950	2,975
Cushing-Shamrock	9,300	9,250
Duncan	3,600	3,650
Edmond	3,950	3,800
Fish	3,175	3,150
Fitts	15,200	14,750
Jesse	2,100	2,150
Graham-Fox	2,375	2,450
Gray	825	825
Healdton	8,700	8,700
Hewitt	4,800	4,675
Keokuk	2,950	3,000
Konawa	1,075	1,050
Lucien	7,275	7,550
Moore	1,600	1,650
Northeastern counties	17,500	17,100
Oklahoma City	94,850	94,150
Olympic	1,975	2,025
Ramsey	3,700	3,700
Sasakwa	1,450	1,500
Sholem-Alechem	2,700	2,750
Seminole district:		
Bowlegs	6,750	6,700
Carr City	2,300	2,300
Dora	2,050	2,100
Earlsboro	4,075	4,075
East Earlsboro	1,825	1,800
South Earlsboro	525	525
Little River	6,500	6,500
East Little River	650	650
Maud	575	550
Mission	1,225	1,225
Seminole	6,700	6,800
East Seminole	1,250	1,250
Searight	1,925	2,025
Total Seminole	36,350	36,500
St. Louis-Pearson	23,750	24,500
Tatums-Tussy	3,225	3,150
Tonkawa-Garber-Thomas	3,700	3,650
Wewoka	1,550	1,625
Yale-Jennings	3,050	3,000
Other pools	83,700	82,850
Total Oklahoma	403,725	402,350

Okmulgee County

Hamilton Switch area: E. G. Hazlett 12 Ashby, C W½ NW 29-14-14. T.D. 1,270 ft., pumped 10 bbl.

Osage County

Bird Creek area: Norris et al 13 Osage, SW SE SW 15-21-12. T.D. 1,327 ft., pumped 5 bbl.

Vern area: Martin et al 1 Osage, SE SE NE 32-20-12e. T.D. 2,129 ft., dry.

Payne County

Coyle pool: Texas 1 Bolster, W½ NW SE 12-17-1e. Set 7-in. 4,818 ft., Wilcox 4,880-91 ft., T.D., shot 100 qt. 4,874-91 ft., acidized 2,000 gal., pumped 6 bbl. oil and 15 bbl. water.

West Norfolk area: Pure 1 Kennedy, NE NE NW 9-18-5. Old well plugged back from 3,302 ft. to 2,706 ft., shot 40 qt. 2,656-84 ft., pumped 5 bbl.

Pontotoc County

Beebe pool: Cornell 1 Gray, NE NE SW 25-5-4. Set 5-in. 2,518 ft., lime 2,557 ft., T.D. 2,583 ft., acidized 3,000 gal., pumped 200 bbl.

Miscellaneous: Paine 1 Newbern, SE SW NE 31-5-4. Wilcox 2,230 ft., second Wilcox 2,280 ft., T.D. 2,328 ft., dry.

Pottawatomie County

St. Louis field: Producers 2 Cardwell, SE SW NW 15-7-4. Old well deepened from 4,232 ft. to second Wilcox 4,179 ft., T.D. 4,395 ft., P.B. 4,235 ft., pumped 15 bbl. oil and 500 bbl. water.

Sinclair Prairie 1 Reagan, SE SE NE 17-7-4. Old well deepened from 3,955 ft. to Wilcox 4,179 ft., T.D. 4,185 ft., pumped 272 bbl. oil and 390 bbl. water.

Hilton Phillips 2 Cherry, SW NE SW 21-7-4. Old well deepened from 4,154 ft. to Wilcox 4,286-90 ft., T.D., swabbed 1,300 bbl.

South Konawa area: Troup et al 1 Fidler, SW SW SE 4-5-5. Sand 597-640 ft., T.D. 643 ft., dry.

Seminole County

Little River area: Sinclair Prairie 9 Sunny, SE NE NW 14-7-6. Sand 3,156 ft., set 5-in. 3,148 ft., T.D. 3,188 ft., flowed 39 bbl. oil, cutting 4 per cent.

North Earlsboro pool: Amerada 1 Pyle, NW SE 3-10-5. Old well deepened from 4,439 ft. to Wilcox 4,675-95 ft., T.D., shot with 20 qt., pumped 222 bbl. oil in 22 hr., cutting 3 per cent.

Stephens County

Doyle pool: Clark 3 Simpson, NW SE NE 11-1n-5w.

(Continued on Page 72)

Curtailment Program Fails as Drilling Increases

By
L. P. STOCKMAN

LOS ANGELES, Calif., Sept. 30.—Drilling operations in California during the year to date are running slightly above similar data for the same period in 1939 and present conditions indicate the probability that development work for the 12 months of 1940 will be on a par with drilling during the calendar year 1939. There is no tangible evidence to indicate decreased drilling during 1941 except the general recognition that a lower amount of development work would promote more efficient curtailment. Several attempts have been made by the California Conservation Committee, official proration group, and while some progress was made this was principally in settled fields and not in flush fields that have been yielding large flowing wells. As in previous attempts, lease obligations proved to be the stumbling block. In view of the fact that California does not have statutory legislation enabling operators to suspend drilling operations there is no way to stop drilling. All leases are legal contracts which bind all parties to perform certain duties included in which is the obligation to drill and continue to drill until all productive acreage is drilled up and to protect acreage from drainage. There is no way to circumvent contracts or leases and thus drilling operations will continue.

In addition to the inability to suspend drilling without specific permission, it is logical to assume that operators will continue development work for their own protection against curtailment penalties. This tends to indicate that drilling operations will continue uninterrupted during 1941 unless some other factor influences the general trend. It is quite evident to those in close touch with California curtailment that the present plan places a penalty against those operators who refrain from drilling. Small marginal wells are not affected but intermediate and top wells suffer reductions in allowables each month. The only way an operator can sustain his current production is to continue drilling and complete enough new wells to offset his current reduction in the allotment of previous completions. No way has been found to remove this objection to the existing uniform method of allotment adopted over a year ago.

Failure of Curtailment Program

The present laissez faire attitude of some producers is creating a dangerous condition. The present curtailment program is based on the assumption that marketers would be able to reduce stocks of crude and/or refined oils during the summer period so that they would be able to accumulate stocks during the winter period of smaller demand. This theoretical hypothesis of removing the highs and lows sounds good but very seldom works out. Last year it was something and this year it is decreased shipments of crude and refined oil to Japan. The dangerous condition confronting the California oil industry will present a very difficult problem later in the year. Certainly the California oil industry can not go on producing 625,000 bbl. per day with impunity. Something must happen to correct the present situation as marketing companies have only been able to effect a reduction in stocks of about 900,000 bbl. during 1940 to date.

Current daily production of leading California fields for the past week follows:

	Barrels
Wilmington	81,650
Kettleman North Dome	47,250
Long Beach	43,100
Midway-Sunset	38,375
Ventura Avenue	32,200
Coalinga	27,350
Huntington Beach	25,500
Santa Fe Springs	25,400
Santa Maria Valley	20,550
Montebello	16,575

SAN JOAQUIN BASIN

Kenda defined the limits of production in the northwestern end of the Kettleman North Dome field early this week by abandoning No. 322-18-J as a duster at 10,912 ft. This well, which cored a small amount of poor oil sand in the Eocene at 10,768-10,912 ft., failed to produce and its abandonment was a natural consequence. This well was located in the NW 18-21s-17e, and very close to the original outer line which was set up just prior to organization of the Kettleman North Dome unit plan of development. It is interesting to note that the contour of the field as outlined in subsequent development closely approximates the area outlined by the outer line. This outer line could be expanded but could not be decreased. In a very few cases the line is outside the area but this was to be expected in the give-and-take arrangement of acreage. It must be remembered that the red and blue lines were drawn by engineers and geologists with only one well producing.

Kern County

Western Gulf Oil Co. is rotating ahead in the gas sand in 34-2 Kern County Land at Paloma in 2-32s-26e at 10,455 ft. This well, which was spotted down structure and is running according to expectations, will probably have to go to 10,600 or 10,700 ft. before completion. To date all of the wells completed in the Paloma field have been located rather close to the top of the structure and have accordingly proved to be large gas wells. Western Gulf Oil Co., which discovered the field as the result of a seismograph survey, has completed two wells and Ohio Oil Co. has finished one well. All three produce a high-gravity crude oil testing 52° A.P.I. This oil is light in color and is more of a condensate than a normal crude oil both in gravity and composition. Western Gulf had hoped the location selected would be low enough structurally to be beyond the gas-cap area. The condition of 34-2 Kern County Land indicates that the company will be obliged to move farther out on the structure to determine whether this field contains a normal gas-cap area and a black oil down on the flanks. No black oil has yet been found in the Paloma field but it is logical to assume that a normal crude oil will be found down structure.

Midway-Sunset

Mascot Oil Co. on whose property Standard Oil Co. drilled a deep dry hole in the Midway-Sunset field several years ago has completed a small well in 26-32s-23e, and will hang up tools for an indefinite period. The company's No. 56 in 26-32s-23e, on a preliminary test indicated the company could open a hot springs because it pumped 15 bbl. of 14-gravity oil cutting 90 per cent hot sulfur water. Bottom of the hole was 3,703 ft. but it was plugged back to 1,216 ft. Republic Petroleum Co. is in the pay in No. 41 in 18-32s-25e and will run 10¾-in. casing within a day or two. Top of the oil sand was logged at 1,870 ft. The well which is being drilled under contract by E. A. Bradfield & Son is located in the new productive area found in the west end of the Midway-Sunset field by Republic Petroleum Co. several months ago. The first well in this new area was good for 150 bbl. per day on the bean but the present well has opened up more oil sand and should consequently show larger production. Marvic Associates, Ltd., has spudded in an outpost in 16-32s-22e, on the northwest edge of the Midway-Sunset field and expects to go to about 2,000 ft. The outlook when that point is reached will determine whether any additional footage will be made.

SAN JOAQUIN VALLEY COMPLETIONS

Cole's Levee Field

Richfield 34-3-C Kern County Land.....3-31s-25e
Flowed 375 bbl., 32.7-gravity, 1 per cent cut, 290,000 cu. ft. gas, T.D. 9,890 ft., in Stevens sand, 7-in. water string cemented 9,445 ft., 467 ft. of 5½-in. liner landed 9,885 ft., perf. 9,465-9,505 ft., 9,666-9,885 ft., 2½-in. tubing including 613 ft. of 2-in. landed 9,845 ft. Kern County.

Kettleman North Dome Field

K.N.D.A. 322-18-J 18-21s-17e
T.D. 10,912 ft., P.B. to 10,737 ft., abandoned because no commercial production secured, formation wet, top Temblor 7,815 ft., top McAdams sand 10,792 ft. Fresno County.

Midway-Sunset Field

Standard 85-33-D fee 33-32s-24e
Pumped 390 bbl., 22.5-gravity, T.D. 3,142 ft., in Lakeview, 8⅝-in. water string cemented 3,030 ft., 140 ft. of 6⅝-in. liner landed 3,139 ft., perf. 60-mesh 3,027-3,139 ft., 3,046 ft. of 3-in. tubing, elev. 738 ft., top Lakeview oil sand 3,090 ft. Kern County.

Southeast Coalinga Field

R. S. Lytle 44-7-F 7-20s-16e
Flowed 1,684 bbl., 32.6-gravity, 1 per cent cut, 1,000,000 cu. ft. gas, bean 18/64-in. to 27/64-in., pressure 1,170 to 1,275 lb., T.D. 7,560 ft., in siltstone, 8⅝-in. water string cemented 6,958 ft., 626 ft. of 6⅝-in. liner landed 7,558 ft., perf. 6,957-7,310 ft., 7,349-7,538 ft., 7,510 ft. of 2½-in. tubing, top Kreyenhagen 5,843 ft., top glauconite 6,948 ft., top productive Gatchell zone 6,978 ft., base Gatchell 7,541 ft., well drilled for Lytle by Bell & Loffland Drilling Co. Fresno County.

Ten Section Field

Shell 52-30-A Kern County Land.....30-30s-26e
Flowed 2,977 bbl., 34-gravity, 2 per cent cut, 1,713,000 cu. ft. gas, open line, pressure 125 to 1,050 lb., T.D. 8,220 ft. in Stevens, 5½-in. water string cemented 7,977 ft., 255 ft. of 3½-in. liner landed 8,220 ft., perf. 8,000-50 ft., 9,080-8,220 ft., 7,958 ft. of 2-in. tubing, "N" point 7,700 ft., top productive Stevens oil sand 8,000 ft., drilled by slim-hole method using small hole and small-diameter casing and liner, from spud to completion in 23 days, this is fastest recorded drilling time in Ten Section field to date, drilled by Shell's own drilling crews. Kern County.

Tupman Field

Richfield 54-32-A Kern County Land.....32-30s-25e
Flowed 1,337 bbl., 33.4-gravity, 885,000 cu. ft. gas, two 1½-in. beans, pressures with 11/64-in. bean 1,100 to 1,900 lb., T.D. 9,050 ft., 8⅝-in. water string cemented 8,370 ft., 739 ft. of 6⅝-in. liner froze 9,012 ft., cemented through perfs. 8,646 ft., recemented through perfs. 8,643 ft., 8,992 ft. of 2½-in. tubing. On September 4 well flowed 1,560 bbl., 32.9-gravity, 16.2 per cent cut, 7,000,000 cu. ft. gas through two 1½-in. beans but flow was killed to reduce gas-oil ratio, this has been done effectively, elev. 307 ft. Kern County.

Richfield 16-29-A Kern County Land.....29-30s-25e
Flowed 669 bbl., 34.8-gravity, 1.5 per cent cut, 398,000 cu. ft. gas, two 1½-in. beans, pressures 50 to 850 lb., T.D. 9,100 ft., 8⅝-in. water string cemented 8,605 ft., 559 ft. of 6⅝-in. liner landed 9,095 ft., perfs. 8,800-9,025 ft., 9,055-95 ft., 9,083 ft. of 2½-in. tubing, "N" point 8,049 ft., top first oil sand in Stevens zone 8,430 ft., drilled for Richfield under contract by T. P. Pike Drilling Co., elev. 309 ft. Kern County.

SAN JOAQUIN VALLEY EXTENSION WELLS

Cole's Levee Field

Standard 20-8 Kern County Land.....5-31s-25e
Grade location 990 ft. S, 2,075 ft. W from E¼ cor. 5-31s-25e, location of this projected outpost is almost 1 mile W of production. Kern County.

Rio Bravo Field

Superior 1 Curtis.....28-28s-25e
Drilling ahead at 8,550 ft. in sandy shale, will extend productive limits if completed as commercial producer. Kern County.

Union 72-28 Crites.....28-28s-25e
Rigging up rotary drilling equipment, will extend northeast limits of production if completed as commercial producer. Kern County.

Strand Field

Associated 25-7-E Kern County Land.....7-30s-26e
Drilling ahead at 8,170 ft. in chert, this well will be carried down into Rio Bravo and Vedder zones for conclusive test, Stevens zone in this field has not been very productive. Kern County.

SAN JOAQUIN VALLEY WILDCATS

Cantua District

Texas 1 Everding.....24-17s-15e
Drilling 8,897 ft. in Kreyenhagen sand and shale, top Kreyenhagen 7,908 ft., based on top of Kreyenhagen, well is running 62 ft. lower structurally than 1 Southern Pacific in 23-17s-15e. Fresno County.

Northeast Coalinga District

Associated 1 U.S.I. 6-19s-16e
Drilling 8,770 ft. in Kreyenhagen brown shale. Fresno County.

Kreyenhagen District

Continental 1 Kreyenhagen 4-22s-16e
Drilling 9,490 ft. in hard grav sand of Eocene age, top Avenal zone (Eocene) 9,419 ft., top Kreyenhagen 8,333 ft., next 100 ft. of hole may determine status of this wildcat. Fresno County.

Blackwells Corners District

Seaboard 66-17 Beer 17-26s-19e
Drilling 7,498 ft. in silty sandstone, shale body 6,718 ft., siltstone 7,450 ft. Kern County.

Buena Vista Hills District

Honolulu 25-P fee 10-32s-24e

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SHREVEPORT, LA.

Drilling 8,220 ft. in shale with streaks of hard tight gray sand giving no cuts, top Bentonite 6,565 ft., objective is Rio Bravo and Vedder zones. Kern County.

Rio Vista Gas Field

Standard 1 McCormack 2-3n-2e
11¾-in. surface casing cemented 603 ft., cleaning out to drill ahead, gas zone is objective. Solano County.

Rumsey Hills District

Standard 1 Tippetts 9-12n-3w
Preparing to land surface pipe about 600 ft. Yolo County.

LOS ANGELES BASIN

R. E. Havenstrite, who recently discovered a new field in the Newhall-Castaic district in Los Angeles County, has been encountering considerable trouble recovering the steel liner preparatory to blanking off a gas zone for the purpose of reducing an abnormally high gas-oil ratio. At the end of 18 days the crew had only recovered 102 ft. of the 342 ft. of 5-in. liner, leaving 240 ft. still in the hole. If a drillable liner had been used it could have been circulated out by drilling up and the well put back on production again. Progress has been slow as the top of the liner is now below the shoe of the 8⅝-in. water string. Mr. Havenstrite will drill his second well on this structure down on the flank in an effort to get away from what appears to be a gas-cap area on top of the anticline. The large initial from of Havenstrite 1 Lincoln in 16-4n-17w has centered this area in the spotlight and while some additional acreage has been taken there has been no stampede into the area because of the excessively high royalties and cash bonuses asked for wildcat acreage. Credit for discovery of commercial production on the Del Valle anticline will be shared by R. E. Havenstrite, the operator, and R. R. (Dick) Sherman, geologist and engineer on the job. Mr. Sherman was chief geologist for Barnsdall Oil Co. when that concern discovered production on Rancho San Francisco in the Newhall district.

Athens—Rosecrans

The Athens section of the Rosecrans field has quieted down and at present only has one incompleted well under way. Southern California Petroleum Corp. is not having much success with 12-1-A Athens recently finished at 8,214 ft. as the well does not seem to have much kick. This well, which found some 45° dips and a faulted area at 8,150 ft., has been plugged back to 8,040 ft. A string of 7-in. casing was cemented early in the week at 7,800 ft. In the meantime the deep-zone discovery well continues to produce about 200 bbl. daily. Inca Oil Corp., which has a well in this district, is also having trouble securing steady production but should be ready for a production test within another few days. It had been thought that several additional wells would have been started in the Athens section of the Rosecrans field before this but apparently the area has cooled off. Thorley Oil Co. proved that there is production in the deep zone at Athens but to date the main accumulation has not been found due to limited drilling. When some operator drills a wildcat north and west of the deep-zone discovery well it may be possible to locate the productive area. In the southern end of the Rosecrans field a number of operators are engaged in development work and during the past few weeks there has been an increase in drilling. Universal Consolidated and John Marion have both started deepening operations and this work will be watched with interest.

East Coyote

Several wells are nearing completion in the East Coyote field of Orange County in Los Angeles Basin and present indications point to the starting of additional wells if present work proves outstanding. On the Toussau property Union Oil Co. is rigging up rotary drilling equipment for an early spud in well No. 2. This well will be an offset to the deep-zone discovery well of Bartholomae Oil Co. completed earlier this year as a good flowing well. The Toussau property is owned in fee by Union Oil Co. and has been held for a number of years. East Coyote Oil Co. is drilling ahead in shale and conglomerate in 1-B Coyote and appears to be running according to expectations. This well topped the conglomerate at 3,600 ft. and cored shale with streaks of oil sand at 3,198-3,258 ft. Metro Petroleum Co. is in an oil sand and shale at 4,260 ft. and after running an electrical survey begun preparations to land casing. Top of the oil showings was at 4,144 ft. The lower part of the hole will be tested and if not productive the company will perforate opposite the upper zone.

LOS ANGELES BASIN COMPLETIONS

Dominguez Field

Shell 107 Reyes 34-3s-13w
Flowed 607 bbl., 30.4-gravity, 1.2 per cent cut, 427,000 cu. ft. gas, T.D. 7,450 ft., 7-in. water string cemented 6,840 ft., 641 ft. of 5-in. liner landed 7,446 ft., perf. 6,850-7,013 ft., 7,038-7,155 ft., 7,175-7,303 ft., and 7,333-7,446 ft. Los Angeles County.

Wilmington Field

Atlantic Oil Co. 17 Harbor 33-4s-13w
Pumped 294 bbl., 17.1-gravity, 11 per cent cut, T.D. 3,543 ft., 8⅝-in. water string cemented 2,635 ft., 928 ft. of 5¾-in. liner landed 3,543 ft., perf. 2,652-2,813 ft., 2,876-3,075 ft., 3,239-3,448 ft, and 3,448-3,543 ft., elev. 26 ft., completed in Ranger zone and located in townlot section of field. Los Angeles County.

General Pet. 19 Southern Pacific 2-5s-13w
Flowed 216 bbl., 17.9-gravity, 2.1 per cent cut, 150,000 cu. ft. gas, 30/64-in. bean, pressures 270 to 800 lb., T.D. 2,890 ft., 8⅝-in. water string cemented 2,507 ft., 436 ft. of gravel-wrapped liner landed 2,889 ft., perf. 2,503-2,889 ft., 2,700 ft. of 2½-in. tubing. Los Angeles County.

Puritan Oil Co. 1 Kern 33-4s-13w
Pumped 120 bbl., 14.1-gravity, 14 per cent cut, T.D. 3,550 ft., elev. 32 ft., 8⅝-in. water string cemented 2,678 ft., 903 ft. of 5½-in. liner landed 3,548 ft., perf. 2,673-2,843 ft., 2,915-3,073 ft., and 3,198-3,548 ft., 3,510 ft. of 2⅛-in. tubing with packer 2,880 ft., completed in Ranger zone, well is located in townlot area in west side of field. Los Angeles County.

LOS ANGELES BASIN EXTENSION WELLS

Long Beach Field

Union 19 L.B.C. 30-4s-12w
Drilling in sand and shale at 2,994 ft. after cementing 18⅝-in. surface pipe at 106 ft., this well is scheduled to be carried down to the De Soto zone discovered by De Soto Oil Co. in December 1938, only three wells have been completed in this zone found around 10,000 ft. Los Angeles County.

Rosecrans Field

Universal Consolidated 14 Trust 18-3s-13w
T.D. 7,845 ft., fish liner preparatory to deepening to lower possibly productive zones.

LOS ANGELES BASIN WILDCATS

Castaic Field

R. E. Havenstrite 1 Lincoln 16-4n-17w
Killed for remedial work to reduce high gas-oil ratio, cutting and pulling steel liner, initial production was 755 bbl. of clean 56.8-gravity oil and 9,500,000 cu. ft. of gas, gas production at times reached 15,000,000 cu. ft. per day and oil production dropped to 350 bbl. daily. Los Angeles County.

Dominguez-Gardena District

Wood-Mellon 1 Wood 31-3s-13w
T.D. 7,795 ft., P.B. to 2,400 ft., redrilling 5,940 ft., will start coring at 6,000 ft. Los Angeles County.

Inglewood District

Federal 1 Smith 7-2s-14w
Drilling 7,890 ft. in sand and black shale. Los Angeles County.

La Habra District

Security L. & W. 1 Security 9-3s-10w
Drilling 5,098 ft. in Repetto sand and shale, top Repetto (lower Pliocene) 3,710 ft. Orange County.

Newhall District

Newhall-Potrero 1 Ferguson 26-4n-17w
S.D. 8,000 ft. Los Angeles County.

Pico District

Cal-Pico 1 Pico 7-2s-11w
Drilling 7,005 ft. in gray sand and hard shale, top of Miocene tentatively placed at 6,300 ft. Los Angeles County.

COASTAL DISTRICT

Continental 18 Grubb, in the San Miguelito field of Ventura County, proved to be an exceptionally good well upon completion at 6,770 ft. as it came in flowing 2,793 bbl. of clean 30.6-gravity oil and 2,300,000 cu. ft. of gas per day through two ¾-in. beans. This lease has proved exceptionally prolific and if memory serves correctly each well finished on the lease to date has shown initials ranging in excess of 1,000 bbl. daily. It has been several years since any number of wells has been completed in the Padre Canyon field of Ventura County but inasmuch as Chanslor-Canfield Midway Oil Co. has the pay in 10-A Hobson in 23-3-24 at 7,085 ft. an early completion is anticipated. This company instead of engaging in a wild scramble to develop its leases in the Rincon and San Miguelito fields of Ventura County has wisely extended its development program over a period of several years with excellent results. It drilled offsets during the early days following discovery of each field to protect its leases but then slowed up. As a consequence Chanslor-Canfield Oil Co. is still getting good flowing wells in both fields.

COASTAL DISTRICT COMPLETIONS

Betteravia District

Union 2 Pezzoni 33-10n-35w
Dry at 7,977 ft. in Sisquoc sand and shale. No. 1 was south of fault and abandoned. Santa Barbara County.

Gato Ridge Field

Field Gasoline Corp. 3 Continental 4-8n-32w
Pumped 385 bbl., 13.6-gravity, clean, T.D. 3,898 ft., 11¾-in. water string cemented 2,228 ft., 1,711 ft. of

(Continued on Page 92)

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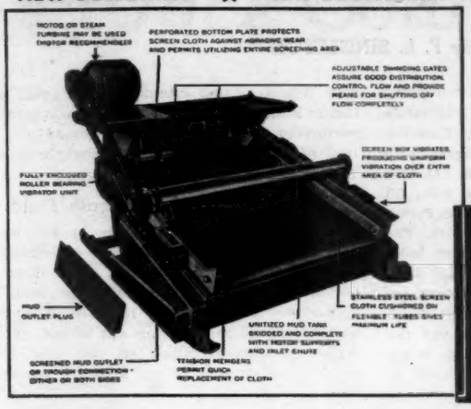
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Calcasieu Lake Well Breaks Louisiana Depth Record

By F. L. SINGLETON

NEW ORLEANS, La., Sept. 30.—A new drilling record for the Louisiana Gulf Coast was established at the Calcasieu Lake salt dome, Cameron Parish, by Superior Oil Co., which is drilling in shale below 13,500 ft. in 3 State-Calcasieu Lake. At this depth the well is about 100 ft. deeper than Fohs Oil Co. 1 State at Bayou Baptiste in Terrebonne Parish which was drilled to a total depth of 13,409 ft. The well is located southwest of two previous dry holes and no shows of importance have been reported since an unsuccessful series of production tests were made at intervals from 8,500-9,000 ft. At its present depth the well is said to be still in the Miocene and the well is projected to the Oligocene sand which is expected to be encountered at approximately 15,000 ft. Should the well fail to find production, the company will continue its present operations around the flank of the structure as location was made for 4 State in 1-14s-9w.

Phillips 1 Miami Corp., the discovery well of the Chenier Ridge prospect, Cameron Parish, is retesting and on a recent gage flowed 100 bbl. of distillate and 300 bbl. of salt water per day through a ¼-in. choke. Tubing pressure was 3,650 lb. and casing pressure 1,000 lb. The well has been in the process of completion for several weeks and testing was discontinued due to the recent flood. The hole is bottomed at 10,656 ft. and is testing through perforated casing at 10,194-10,200 ft.

In the Iowa field, Cameron Parish, Magnolia Petroleum Co. has cored sand with an oil and gas showing in 4 Wait, and casing was cemented for completion. While details of the core record and electrical survey were not available, it is reported that approximately 37 ft. of sand was logged to the total depth of 8,237 ft. This is the same sand recently opened by the deepening of the company's 9 Wait. This new pay is said to be a uniform sand overlying the structure and its discovery is leading to a revival of drilling activity.

New Pay in Bayou Blue

A new producing horizon for the Bayou Blue field, Iberville Parish, was opened by Superior 4 Schwing Lumber & Shingle Co., completed through perforated casing at 4,652-53 ft. for an initial production of 150 bbl. per day through a ¼-in. choke. Tubing pressure was 500 lb. and casing pressure 600 lb. The well is located in 74-9s-10e, northeast of the company's 3 Schwing which is producing from a depth below 5,000 ft.

Danciger Oil & Refining Co. is staking location for a test in the Grand Lake area, Cameron Parish, east of production in 23-13s-3w. The well is being drilled on a farmout lease from Amerada Petroleum Corp. and Pure Oil Co.

Texas 1 State, the discovery well of the Lake Salvador field, St. Charles Parish, was officially completed the past week for an initial production of 840 bbl. of 33.5-gravity oil per day flowing through a ¼-in. choke under a tubing pressure of 1,500 lb. Production is from the Miocene sand through perforated casing at 9,775-9,800 ft.

On the Coon Point prospect, Terrebonne Parish, Texas 5 State is bottomed at 10,377 ft. in heaving shale and the well is temporarily shut down while drilling mud is being conditioned to keep the well from blowing out. Details as to where the sand was encountered were not available.

On the South Lake prospect, Calcasieu Parish, W. T. Burton and Continental Oil Co. 1 Mayo Realty is drilling in sidetracked hole below 9,000 ft. in an attempt to recore the sand at 10,520-60 ft., where the well attempted to blowout, which resulted in the drill stem becoming stuck.

Additional drilling on the northwest edge of the Eola field, Avoyelles Parish, is anticipated following the completion of Gulf Oil Corp. et al 6 Moullere in 1-2s-2e. The Wilcox section correlated high with other producers in the area, and the well was completed through perforated casing at 8,515-33 ft. for an initial production of 325 bbl. per day, flowing through a ⅛-in. choke.

Crucial Test in Erath Field

An attempt was being made in the Erath field, Vermilion Parish, to test Humble 1 Vermilion Parish School Board, ½ mile due west of the discovery well. Bottomed at 11,677 ft., 7-in. casing was being cemented preparatory to testing at 10,144-64 ft., where sand with an oil and gas showing was logged. With several dry holes already drilled on the structure, future development depends largely upon the outcome of this well.

A second gas well was recorded for the shallow Ritchie field, Acadia Parish, as Henry DeArman 1 R. McManus was closed in after flowing dry gas when tested through perforated casing at 3,378-80 ft. The well was tested through a ¼-in. choke and tubing pressure built up to 1,400 lb.

Texas 1 Bayou Perot, approximately 1 mile southeast of the discovery well of the Delta Farms discovery well, La Fourche Parish, is scheduled to be retested after the well showed for a dry gas well when tested through perforated casing at 9,745-60 ft. The perforations were cemented off, and at the close of the week the well was being tested at 8,774-8,815 ft. Approximately five sands were reported to have been logged, and all will be tested until a successful completion is made. The discovery well was completed at 11,290-11,350 ft. and production from any one sand in the Texas well would open a new producing horizon for the field.

LOUISIANA GULF COAST COMPLETIONS

Acadia Parish

Jennings field: Stanolind 20 Houssiere-Latrielle, 314 bbl., ¼-in. choke, perf. casing 7,485-7,523 ft., T.D. 8,442 ft.

Cameron Parish

East Hackberry field: Harrison & Abercrombie 3 Vidrine, 474 bbl., ¼-in. choke, top sand 7,262 ft., T.D. 7,274 ft.

Evangeline Parish

Ville Platte field: Continental 1 Fontenot, dry, T.D. 10,230 ft.

Jefferson Parish

Barataria field: California Co. 6-A Fleming, 288 bbl., 5/32-in. choke, perf. casing 8,182-98 ft., T.D. 8,304 ft.

St. Martin Parish

Anse La Butte field: W. D. Kennard 1 Hocker & McLean, top salt 4,450 ft., T.D. 4,475 ft., dry.

Terrebonne Parish

Dog Lake field: Texas 24 State, 178 bbl., ⅛-in. choke, perf. casing 7,650-94 ft., T.D. 7,817 ft.

Plaquemines Parish

Venice field: Tide Water 1-B Manhattan Land & Fruit Co., dry, 9,853 ft.

LOUISIANA GULF COAST DRILLING REPORT

Acadia Parish

Humble 2 Leger, South Crowley field, drilling shale 7,489 ft.

Cameron Parish

Stanolind 23-B School Board, West Hackberry field, drilling shale 3,188 ft.

Iberville Parish

Humble 3-B Wilberts & Sons, Bayou Des Glaize salt dome, drilling shale and lime 4,700 ft.

Jefferson Parish

Shell 1 State-Bayou des Illettes prospect, coring shale 11,890 ft.

Titanic Oil Co. 1 Marrero-Lance Co., 2-13s-23e, spudded.

Jefferson Davis Parish

Continental 3 Calcasieu National Bank, South Roanoke field, 7-in. casing cemented 9,882 ft., T.D. 9,885 ft.

Livingston Parish

Humble 1-B Great Southern Lumber Co., 21-7s-4e, drilling shale 7,020 ft.

Orleans Parish

W. T. Burton 3 State-Lake Catherine, T.D. 8,770 ft., P.B. to 8,562 ft.

Plaquemines Parish

Gulf 1 State QQ, Black Bay prospect, drilling shale 9,756 ft.

St. James Parish

Shell 1 Federal Land Bank, La Pice field, coring lime 9,846 ft.

St. John the Baptist Parish

Pan American 2 Mill, La Place field, coring shale 8,315 ft.

St. Martin Parish

Shell 2 Iberville Land Co., Happytown field, coring sand and shale 10,052 ft.

Vermilion Parish

Humble 1 School Board, ½ mi. due west of discovery well Erath field, coring sand and shale 11,676 ft.

Forest City Basin

(Continued from Page 63)

to 35 bbl. of oil an hour after acidizing with 2,000 gal. It is the ninth producer in the pool and the eleventh in Richardson County, farthest southeastern county in Nebraska.

Skelly Oil Co. 1 Wallraff, C 20-1n-16e, was being put on the pump. It flowed 35 bbl. of oil in 3 hours after acidizing with 5,000 gal. Hunton lime was topped at 2,217 ft., total depth 2,259 ft.

Several new tests were started or locations announced in the field. Joseph Ekert and P. G. Longmire 1 Ast, NW 6-1n-14e, southeast of Humboldt, was spudded with cable tools and will be drilled deeper with rotary. Plans were reported near completion for a community test at Salem. Several wells were being drilled in Nemaha County, bordering Richardson County on the north.

In the Missouri sector of the Forest City basin, Jerome Florey, contractor for Brin & Nathan 1 Decker, C NW NW 1-61n-38w, Holt County, was tearing down rig. Hole was bottomed at 2,310 ft., and efforts to develop Hunton lime production were unsuccessful. Contract depth was 2,600 ft. Fate of the wildcat is undetermined. The rig is being moved to location at Florey & Kilby 1 Meyer, SW SW 22-62n-39w, Holt County.

O. M. Evans 1 Petty, NE NE 35-55n-29w, Caldwell County, was spudded. Same operator's 1 Leamer, SW SW 29-55-28w, total depth 405 ft., failed to produce after plugging back to shallow gas sand and shooting, and was saved for a water well.

Oklahoma Fields

(Continued from Page 68)

Old well deepened from 1,075 ft. to 1,578 ft., P.B. 1,561 ft., perforated casing, pumped 12 bbl.

Velma area: Kiester 1 Rangeley, SE SE NE 16-1s-5w, Sand 718-27 ft., T.D., set 6⅝-in. casing 716 ft., gaged 7,000,000 cu. ft. gas.

Tillman County

Frederick field: I. T. I. O. 2 Peters, SW SW NW 6-3s-18w. Canyon 3,131 ft., T.D. 3,140 ft., set 7-in. 3,131 ft., pumped 66 bbl. in 6 hr., bottom-hole pressure 1,300 lb.

Tulsa County

Independent area: M. L. King 3 Samuels, CEL NW NE 35-17-12. T.D. 1,322 ft., gaged 5,000,000 cu. ft. gas.

Bruner area: Tate & Heinerman 2 Cooper, NW SW NE 4-19-12. T.D. 1,319 ft., gaged 500,000 cu. ft. gas.

Airport pool: Parks Drlg. 1 National Bank of Commerce, NE NE SW 35-20-13. T.D. 1,050 ft., pumped 5 bbl.

Wagoner County

Bilby area: James Pet. 1-C Robson, NE NW SE NW 21-19-15. T.D. 1,019 ft., pumped 25 bbl.

Johnson Bailey 1-A Robson, SE NE NW 22-19-15. T.D. 934 ft., pumped 85 bbl.

WILDCAT REPORTS

Creek County

Shell 1 Lynihan..... NE SE NE 31-15-7 Mayes 3,626 ft., Woodford 3,900 ft., no Hunton, Sylvan 3,932 ft., drilling 3,964 ft.

Garvin County

S. A. Thompson 1 Alliance.....SW SE SW 22-4-2 Viola 3,200 ft., drilling 3,228 ft.

Lincoln County

Kemp et al 1-A Turner.....SE cor. 28-17-5 Woodford 3,785 ft., Sylvan 3,822 ft., Viola 3,885 ft., Wilcox 3,952 ft., T.D. 3,952 ft., S.D., water in hole.

Osage County

Peters & Norbla 15 Osage.....SE NW SW 16-22-9 Arbuckle 2,636 ft., T.D. 2,655 ft., 500 ft. oil in hole, set 5-in. casing at 2,640 ft.

Pontotoc County

Crescent Oil 2 Thompson.....NE NW SW 29-3-4 Viola 1,365 ft., S.D. 1,675 ft. in Trenton.

Stephens County

Brown et al 1 Dilly.....SE SE 6-3s-5w Arbuckle 1,720 ft., T.D. 1,838 ft., ran electric log and S.D.

Wagoner County

Claude Jordan 1 Meriwether.....NE cor. 16-18-17 Mississippi 554 ft., T.D. 564 ft., S.D.

By
R. MARNE SANFORD

Possible Lime Discoveries in Clay and Jack Counties

WICHITA FALLS, Tex., Sept. 30.—Indicated discovery wells for both Clay and Jack counties topped the news of the week in the North Texas district. A new Marble Falls lime field was in prospect southwest of Jacksboro in Jack County and a new deep Caddo lime field appeared possible for central Clay County.

Five miles southwest of Jacksboro and about 2 miles east of the southern part of the Bryson field, Continental 1 Robertson, M. J. Swann Survey, was testing after drilling plug from casing cemented on top of saturated Marble Falls lime from 4,651-62 ft. Prior to cementing casing a drill-stem test showed a large blow of gas and a spray of oil in 10 minutes. The indicated discovery is about 2 miles south of the Mathis field opened last year by Cooper & Steed from the Bryson sand at the 2,575-ft. level. The opening of a new deep field in this area would stimulate the deepening of many shallow failures as well as the starting of new deep exploratory holes. There have been no tests drilled deeper than about 3,200 ft. within sveral miles of the possible discovery.

Clay County

The Clay County wildcat claiming new attention in the upper Fort Worth basin area is Jones Associated Oil Co. and Roberts & Lynch 1 Bryant Edwards, Block 40, Madison County School Lands Survey, 1 mile northwest of the town of Ralston, in the approximate center of the 4,000 and 5,000-ft. exploratory area of a year ago in Clay County. Production in the 1 Edwards was indicated from the Caddo lime from 5,986-92 ft. and from the Ellenburger lime from 6,077-80 ft. As is typical of deep wildcats now being drilled in the basin area, the hole is carried to the Lower Ordovician levels or to crystalline material before any zone of possible production is thoroughly tested. The well was drilling below 6,130 ft. at the close of the week after topping the Ellenburger lime at 6,077 ft.

Montague Discovery Gets Outlet

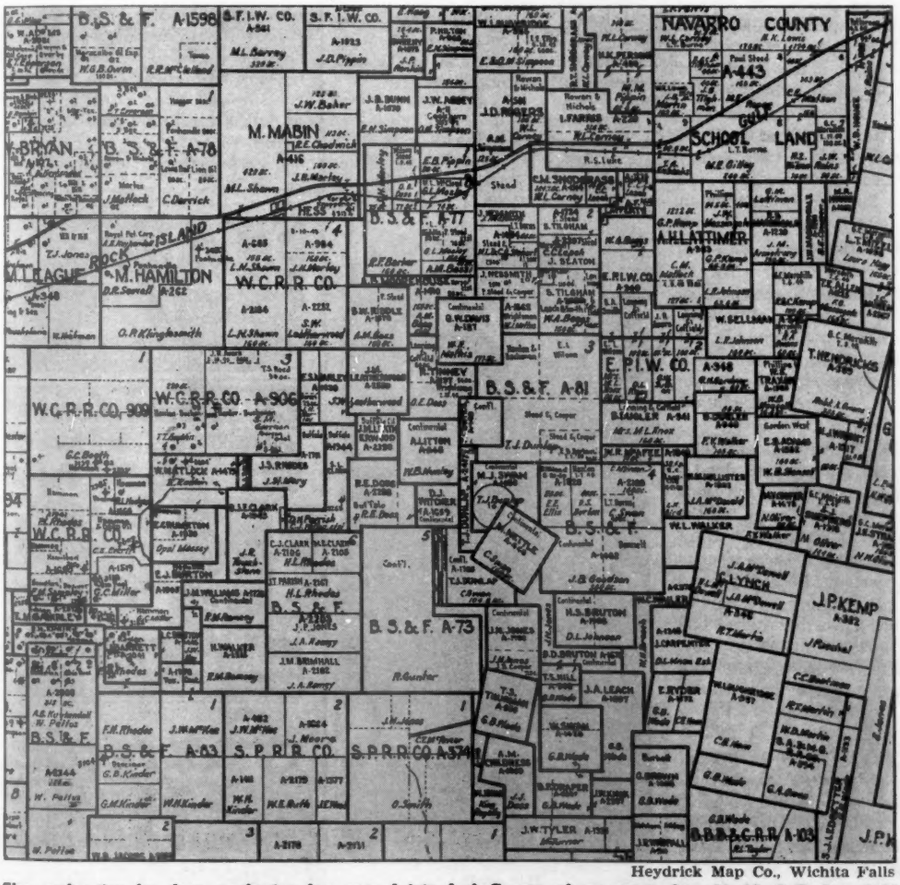
Hults-Owen 1 Tucker, Caddo lime discovery of 2 weeks ago in Montague County, has been given a pipeline outlet by Magnolia Pipe Line Co. The Magnolia trunk line from Electra in Wichita County runs just 1½ miles northeast of the discovery and a branch line is now under construction to the new discovery. Meanwhile, new development has begun in the field. Hults-Owen 1 Summers, 467 ft. from the south and west lines of Block 2821, T.E.&L. Survey, is a new location as a north offset to the discovery well. The price of $16,000, half cash and half to be out of oil, was paid by McElreath & Suggett, Fort Worth, for a 55-acre tract 1½ miles southeast of the discovery well. A test is planned for the near future.

Rogers & Rogers Field Outpost

The Rogers & Rogers field, in northern Montague County and one of the first deep lime fields discovered in the Fort Worth basin, has been given a 1-mile outpost location. It will be Carnation Oil (operating firm of Rogers & Rogers) 1 Mrs. J. D. Jones, in the J. Y. Castello Survey, on acreage purchased for $125 per acre. The tract includes 40 acres and is the northwest quarter of Block 40, in the Castello Survey. The location is about 1 mile west of the W. T. Payne 1 Baker, W. J. Wells Survey, which last summer extended the field to the west and opened a new and deeper pay at the 5,400-ft. level. The contract depth on the new outpost is 6,000 ft.

Parker County

One of the counties included in the Fort Worth basin play but not yet included in the drilling program is Parker County. A wildcat test was seen for the near future for this county as Jones Associated Oil announced intentions to drill on a block about 2 miles north of Deaster and centering around Section 203, T.&P. Survey, Abstract 1366. The actual starting of the wildcat will await the completion of the firm's operation in Clay County.



Heydrick Map Co., Wichita Falls

The exploration for deep production has spread into Jack County where a new deep Marble Falls lime field is in prospect at Continental 1 Robertson, about 2 miles east of the Bryson field and a similar distance south of the Bryson sand producing Mathis field opened last year by Cooper & Steed. The 1 Robertson is testing after drilling plug set on top of saturation from 4,651-62 ft. A large blow of gas and some oil was reported prior to cementing the casing

NORTH TEXAS COMPLETIONS

(24-hour gages)

Archer County

Holliday field: Bridwell and Texas 4 Oil Inv., dry at 1,475 ft.
Burns 99 White, 10 bbl., 445-57 ft.
Burns 101 White, 10 bbl., 446-523 ft.
Burns 102 White, dry at 900 ft.
Mankins deep field: British American 2 Wilson, 1,232 bbl., 4,665-4,702 ft.
British American 1 Wilson, dry at 4,851 ft.
Hul-Silk field: Cox & Hamon 2 Nichols, 624 bbl., 4,356-4,416 ft.
Humble 9 Wilson, 230 bbl., 3,735-84 ft.
Humble 10 Wilson, 892 bbl., 3,760-86 ft.
Magnolia 13 Rutty, 890 bbl., 3,751-91 ft.
Petroleum Prod. 1 Anderson C, 1,200 bbl., 4,356-4,420 ft.
Phillips 1 Little-Novella, 1,750 bbl., 4,353-4,416 ft.
Texas 42 Wilson, 47 bbl., 4,867-98 ft.
Texas 43 Wilson, 795 bbl., 4,371-4,400 ft.

Baylor County

Seymour field: British American 1 Green K, 150 bbl., 3,017-27 ft.

Clay County

Thornberry field: Bridwell Oil 16 Edrington, dry at 1,770 ft.
Costley 6 McInnes B, 10 bbl., 1,069-88 ft.
Norwood 11 Taylor, 10 bbl., 1,130-41 ft.
Sussex Oil 12 Glasgow, 10 bbl., 1,225-50 ft.
Sussex Oil 13 Glasgow, 25 bbl., 1,089-1,100 ft.
Kinder field: Frabor-Hodges Corp. 1 Leona Kinder, dry at 4,356 ft.
Henderson field: Shell 4 Henderson, 925 bbl., 3,190-3,449 ft.
Shell 1 Mullens, 768 bbl., 3,179-3,235 ft.

Cooke County

Walnut Bend field: Magnolia 10 Ramsey, 325 bbl., 4,700-4,713 ft.
Sun Oil 6 Fred Snuggs, 202 bbl., 4,941-49 ft.

Foard County

Gamble field: Foster Pet. 2 Belle, 127 bbl., 2,357-72 ft.
Thomason Oil & Rlty. 1 Gamble, 390 bbl., 2,346-70 ft.
Thomason Oil & Rlty. 2 Gamble, 60 bbl., 2,351-60 ft.

Jack County

Antelope field: Gilmore 1 Sloan, 6 bbl., 406-26 ft.
Bryson field: Tebay 4 Smith, 30 bbl., 2,311-53 ft.

Montague County

Wildcat: Dillard 1 Holland, dry at 5,991 ft.
Ringgold field: Omohundro 3 Seay, 1,050 bbl., 5,692-5,717 ft.
Bonita field: Sinclair Prairie 3 Howard, 2,000 bbl., 5,223-39 ft.
Sinclair Prairie 2 Lee, 1,750 bbl., 5,441-56 ft.

Wichita County

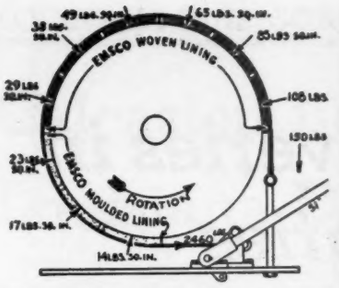
Burkburnett field: Clark 3 Warren, dry at 1,686 ft.
Gates 3 Birk, dry at 469 ft.
Norwood 1 Doyle, dry at 1,436 ft.
K.M.A. field: Continental 7-B Waggoner Bros., 500 bbl., 3,764-95 ft.

NORTH TEXAS DRILLING REPORT

Archer County

Walter Gant and Tom Medders 1 Vogtsberger, Blk. 3, G.E.C.L. Sur., 1,350 ft. SE of discovery well, show oil 4,651-55 ft., coring.
Clark 1 Goldsmith, Blk. 6, S.A.R. Sur., S.D. 5,470 ft.
Shell 1 Coleman, Lot 3, Blk. 74, A.T.N.C.L. Sur., slight show oil 3,648-80 ft., D.T. test 15 min., recovered 650 ft. oil and mud, drilling 5,225 ft.

(Continued on Page 79)



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Among the Drilling

ALLEN & MORRIS, San Antonio, Tex., received contracts for two Texas wells, and material has been moved to location. In Brooks County a deep test is being started for Standard Oil Co. of Texas on the Garcia lease, while in Victoria County, and located near the discovery well of a new gas field, Humble Oil & Refining Co.'s No. 2 Nave is scheduled to be spudded by the end of the week. In the old Bruni field, Webb County, American Liberty Oil Co.'s No. 8 Bruni was abandoned as dry at a depth below 10,200 ft., while in the Shield field, Shield Oil Co.'s No. 1 Gallagher is drilling below 3,500 ft.

TARGET Drilling Co., Wichita Falls, Tex., is indicating a new field discovery at a wildcat being drilled for Continental Oil Co. southwest of Jacksboro in Jack County, North Texas. It is No. 1 Robertson, about 1½ miles south of the Mathis area, and is indicating production from a section of conglomerate drilled from 4,651-62 ft. Prior to cementing casing a 10-minute drill-stem test resulted in a large blow of gas and about 5 ft. of live oil. The pay section has been identified as Marble Falls of the Bend series and casing is set at 4,560 ft. The prospective discovery is located in the M. J. Swann Survey. Production in the Mathis field is from the Bryson sand at 2,565-85 ft.

H. M. HARRELL, Houston, Tex., has spudded Seagraves Interests' No. 1 Eignus, a northeast edge test located in the Hastings field, Brazoria County, Texas. Contract depth is 7,000 ft.

O. C. PROFITT, drilling contractor of Fort Worth, Tex., has spudded a 3,000-ft. wildcat in northeastern Hood County, West Central Texas, for the Aztec Oil Co., Fort Worth. It is No. 1 J. L. Gallagher, on a 100-acre tract in the R. Alway Survey. Located about 2 miles north of Granbury, it is part of a 3,000-acre block. Northwestern Hood County was included in the past several months' active leasing and geophysical work in connection with the Fort Worth basin play.

GEORGE ECHOLS, Houston, Tex., drilling for Titanic Oil Co., his associated company, opened a new gas field in Victoria County, Texas, with the completion of No. 2 T. C. Edwards, and the rig is being moved to a new location. For the same company, one rig is being used on a wildcat operation in Fort Bend County, Texas, while in Jefferson Parish, coastal Louisiana, drilling was started on the company's No. 1 Marrero.

U. L. MILLER contractor of Abilene, Tex., is preparing to move in cable tools for a scheduled 2,000-ft. wildcat for K. B. Nowels, geologist of Abilene, in Taylor County, West Central Texas. The location is 9½ miles south of Abilene and on a 63-acre tract owned in fee by the Hardin-Simmon University of Abilene. It is part of a 1,500-acre block on which surface geology has been worked and on which several core holes have been drilled. The test is spotted 200 ft. from the south and west lines of the S½ NW Section 36, Lunatic Asylum Lands, ½ mile southwest of Potosi.

ROWAN Drilling Co., Houston, Tex., is scheduled to move a rotary to the Pine Island prospect, Jefferson County, Texas, where a joint wildcat test with Nichols Oil Co., will be drilled on the Duplex Melancon lease. The well is scheduled to test the Frio formation. Another operation is reported in the Rowan field, Brazoria County, Texas.

TWIN Drilling Co. of Saginaw, Mich., last week spudded an extension test for Pure Oil Co. in the North Adams field of Arenac Coun-

Crew of L. A. Long Drilling Co., Graham, Tex., at a wildcat in Fisher County, West Texas: Front, George Mayberry and Steve Alberts; back, W. E. Wemberley and F. B. Saggs (driller)

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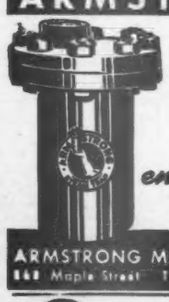

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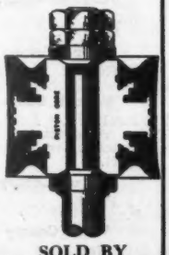

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ty, Michigan. The new start was Pure's No. 1 Orville Yenior in NE SE NW Section 22-19n-3e. The test will do much to determine potential producing area to the west of the new producing area recently opened by Sun Oil Co.

W. B. OMOHUNDRO, drilling contractor and independent operator of Wichita Falls, Tex., has been awarded contract for drilling a new wildcat test in southeast Montague County, North Texas. The test will be drilled for J. G. Hammond of Fort Worth and is on a 2,000-acre block which was shot with seismograph. Contract is for 6,500 ft. and location of the wildcat, No. 1 Mrs. Z. C. Jester, is 467 ft. from the south and east lines of the 84.5-acre Jester tract in the E. Wingate Survey, Abstract 835. The location is 2 miles west of the town of Mallard and about 9 miles west of the Seitz, Comegys & Seitz's No. 1 Harris, a wildcat now drilling below 5,140 ft. The Jester wildcat is to be spudded this week.

LOUAL Drilling Co., Tulsa, completed a gas well at Vulcan Oil Co. and others No. 1 Stevenson, NE NW SE 24-8-10, wildcat about 5 miles east of the Yeager pool, Hughes County, Oklahoma. Production was estimated at 3,000,000 cu. ft. daily from Booch sand at 3,000 ft.

CHRISTIAN-CARPENTIER Drilling Co., Houston, Tex., extended the Ogburn field of Harris County, Texas, about 3,200 ft. southwest with the completion of its joint test with Joyce Richardson. Completed through perforated casing at 6,915-29 ft., the well is flowing at the estimated rate of 100 bbl. of distillate daily.

RICHMOND Drilling Co., Midland, Tex., through a recently consummated deal with C. O. Collins, Fort Worth, will drill two tests on the east side of the North Cowden field in Ector County, West Texas. The drilling company obtained from Collins a half interest in an 80-acre tract on the R. W. Smith land in the center of the eastern part of the field, the lease being S½ SE Section 13, Block 43, Township 1s, T.&P. Survey. The $37,000 consideration is to be allocated toward drilling, in joint ownership for the two parties, the wells on the tract. Cellars and pits are being dug for both tests, one to be the No. 1 R. W. Smith, 660 ft. from the south and 1,980 ft. from the east lines of Section 13, and the other to be No. 2 Smith, 660 ft. from the south and east corner of Section 13.

WYNN CROSBY Drilling Co., Houston, Tex., is moving a rotary to Jackson County, Gulf Coast Texas, for the company's No. 1 Four Way ranch, a projected Frio test located in the Young Coleman Survey.

CLYDE PULSE and Sam Schneider, Hutchinson, Kans., contractors, are drilling C. L. Carlock and others' No. 1 Karber, C W½ NW NW Section 7-19-10w, wildcat in Rice County, Kansas. The outpost is 1 mile east of the Rick pool and 3½ miles northwest of the Greater Silica field.

HOGAN BROTHERS, drilling contractors of Mount Pleasant, Mich., has been awarded contract for drilling two wells in the Overisel field of Allegan County, Michigan, by W. L. McClanahan. The new starts are the operators' No. 2 Busscher in NW SW NE Section 16-4n-14w, and No. 3 Busscher in SW NW NE Section 16-4n-14w.

DAVIS BROTHERS, Independence, Mo., contractors, spudded with cable tools and set surface casing at Joseph Ekert & P. G. Longmire's No. 1 Ast estate, Section 6-1n-14e, wildcat southeast of Humboldt, Richardson County, Nebraska. Drilling was to be continued with rotary tools.

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Bazzette and Long Lake Fields Get Small Extensions

By R. MARNE SANFORD

DALLAS, Tex., Sept. 30.—Slight extensions to production in the Long Lake field of Freestone County and the Bazzette field of Navarro County centered the interest of an uneventful 7-day period in eastern Texas. Completions in the area numbered seven for the East Texas field and nine for the East Central area, three of the latter nine being failures. There were only two locations staked in the East Central counties, both being in the Talco field. Three new locations were recorded in the East Texas field.

Offering a small extension to the Freestone County portion of the Long Lake field, Hunt Oil 1 H. R. Deitz, S. Sanchez Survey, on the northwest side of the field, has been completed for a combination oil and gas well. It made 26 bbl. of oil in 24 hours through ⅛-in. choke, together with an estimated 80,000,000 cu. ft. of gas. It is producing from perforations at 5,167 to 5,240 ft. Pressure at the new well was 1,475 lb. on the tubing and the gas-oil ratio was 3,384:1.

Bazzette Field

A half mile west of the limits of production in the Bazzette field of Navarro County the W. W. Lechner 1 E. Trammell is showing for an extension producer. The outpost showed 600 ft. of oil on a 20-minute drill-stem test from the Woodbine sand at 2,986-3,015 ft., total depth, prior to cementing casing. Plug was drilled late this week and testing was under way as the week closed. Should production be obtained it will be one of the major extensions for this small field which is, in reality, a south-extension area to the Flag Lake field of Henderson County also producing from the Woodbine sand.

Wildcats Again Active

Two wildcat tests, both of which have been delayed for some time, are again on the active list. In Kaufman County T. G. Shaw, Fort Worth, is preparing to resume fishing operations at 1 Wynne. deep wildcat in the Newman Survey, which has been shut down for several weeks with tools stuck in the hole at 6,454 ft. The hole has been cleaned out to 5,000 ft. and should the fishing job be successful deepening will be started at once.

EASTERN TEXAS COMPLETIONS

(24-hour gages except in East Texas field)

Anderson County

Cayuga field: W. F. Morgan 1 Royal & Cone, 29 bbl., ⅛-in. choke, 3,762-80 and 4,021-30 ft.

Franklin County

Talco field: Humble 12 Dawson, 41 bbl. 2½ hr., tubing, pumping, 4,183-4,255 ft.
Humble 22 Penn-fee, 55 bbl. 2 hr., pumping, tubing, 4,238-87 ft.

Freestone County

Cayuga field: Amerada 12 Berk, 190 bbl., ½-in. choke. 4,014-27 ft.
Long Lake field: Hunt Oil 1 Deitz, 26 bbl., ⅛-in. choke, 80,000,000 cu. ft. gas, 5,167-5,240 ft., perforations.

Gregg County

East Texas field—Longview area: Deep Rock 27 Jones, 33 bbl. 30 min., 2-in. tubing, 3,544-85 ft.
Stewart Oil 4 Killingsworth, 30 bbl. 10 hr., pumping, 3,592-3,605 ft.
East Texas field—Kilgore area: A. B. Ryan 3 Spear, 190 bbl. 3½ hr., 2-in. tubing, 3,541-73 ft.
Shell 29 Willoughby, 26 bbl. 30 min., 2-in. tubing, perforations 3,536-50 and 3,572-82 ft.

Navarro County

Wildcat: Willis 1 Cheney, W. Reed Sur., 12 mi. SE Corsicana, top Nacotoch 727 ft., dry at 828 ft.
Willis 1 Swanson, S. Johnson Sur., Cheneysboro area, top Nacotoch 822 ft., dry at 875 ft.

Robertson County

Wildcat: Rhett Wilder 1 Moses Cerf, J. Erwin Sur., 7 mi. S Franklin, top Carrizo 541 ft., Wilcox 740 ft., dry 1,611 ft.

Rusk County

East Texas field—Kilgore area: R. C. Brantley 3-B Camp, 20 bbl. 12 hr., pumping, 2-in. tubing 3,536-64 ft.
East Texas field—Joiner area: Roosth & Genecov 10 Curbo, 41 bbl. 18 hr., pumping, 3,655-58 ft.

Smith County

East Texas field—Joiner area: Roosth & Genecov 1 Wolford, 36 bbl. per hr., 2-in. tubing, 3,738-39½ ft.

Titus County

Talco field: Lucey Pet. 19 Williams, 58 bbl. 6 hr., pumping, 2-in. tubing 4,265-90 ft.

EASTERN TEXAS DRILLING REPORT

Anderson County

Wright Drlg Co. 1 Hart & Maberry, NE cor. J. W. Box Sur., S.D. 10 ft.

Delta County

Partin & Skinner 1 Lomar, T. Jones Sur., S.D. 60 ft.

Ellis County

W. E. Butler 1 A. M. Sims, 1 mi. SW Bristol on 8,000-acre block, T.D. 3,720 ft., stuck pipe free, prepare drill ahead.

Falls County

Joy Carruth 1 Westbrook, Manchaca Sur., 4½ mi. NE of Chilton, S.D. 730 ft.

Fannin County

H. T. Fleming 1 Welch, E. J. Allen Sur., 4 mi. NW Honey Grove, S.D. 90 ft.
Damon Oil 1 A. L. Chaffin, SW cor. 85-acre tract, J. Ketcham Sur., 4 mi. NE Bonham, clearing location.

Kaufman County

T. G. Shaw, Tr. 1 Agnes Wynne, B. S. Newman Sur., 8 mi. E Kaufman, lower Trinity test, base Massive 6,255 ft., T.D. 6,454 ft., C.O. to 5,000 ft., prepare resume fishing job.

Leon County

H. W. Hawker 1 C. H. Mills, M. Copeland Sur., 2½ mi. E of Normangee, top Midway 3,850 ft., S.D. 4,365 ft.

Limestone County

Frank Bryan 1 F. Bevill, J. H. Murray Sur., 1 mi. SW Horn Hill, 10⅝-in. at 1,500 ft., top Austin 2,052 ft., base Austin 2,458 ft., top Buda 2,803 ft., top Georgetown lime 2,897 ft., drilling 3,134 ft.

Red River County

J. F. Morrissey 1 Tyler, James Miro Sur., 3½ mi. SE of Bogata, 5,000-ft. test, 10-in. set at 110 ft., S.D. 1,093 ft.

Upshur County

H. C. McGahey 1 Ludie Turner, SE cor. 200-acre tract in A. Butler Sur., top Pecan Gap 2,380 ft., base Pecan Gap 2,970 ft., S.D. 4,211 ft.

Wood County

Amerada Pet. 1 J. J. Lloyd, William Barnhill Sur., 7 mi. E Yantis, 13⅜-in. at 552 ft., top Nacatoch 1,695 ft., Pecan Gap 2,592 ft., base Pecan Gap 2,785 ft., drilling 3,513 ft.
Bobby Manziel 1 F. M. Morrison, James Pollock Sur., 4 mi. N Hawkins, 10-in. at 100 ft., drilling 1,750 ft.

Illinois Fields

(Continued from Page 64)

Pumped 250 bbl. oil, 4,000 gal. acid, McClosky 3,341-46 ft., T.D. 3,386 ft.
C. Robinson 2 Elliott.....NW SW SE 26-2s-8e
Pumped 250 bbl. oil, 4,000 gal. acid, McClosky 3,347-60 ft. and 3.372-83 ft., T.D. 3,304 ft.

White County

Sun 14 Greathouse.....NW SE SE 33-4s-14w
Flowed 400 bbl. oil, 90-qt. shot, Cypress 2,560-95 ft.
Sun 16 Greathouse.....NE NW SE 33-4s-14w
Flowed 300 bbl. oil, 90-qt. shot, Cypress 2,563-96 ft.
Exchange 2 M. Friel-B .....NE NW SE 34-5s-6e
Pumped 410 bbl. oil, 10-qt. shot, Benoist 2,950-69 ft.
Wiser 2 Hulett .....NE SW SE 23-6s-8e
Flowed 992 bbl. oil, McClosky 3.057-98 ft.. T.D. 3,182 ft.
Westgate 1 H. G. Ervine.....NE SE NW 26-6s-8e
Pumped 212 bbl. oil and 50 bbl. water, 2,000 and 3,000 gal. acid, McClosky 3,043-52 ft .
Cameron 1 Leathers.....NE SW NE 22-6s-9e
Pumped 95 bbl. oil, 10 and 40-qt. shots, Waltersburg 2,228-44 ft.
Exchange 5 Angle-Storms.....SW NE NE 22-6s-9e
Pumped 78 bbl. oil, Waltersburg sand 2,234-59 ft.
Mabee 1 Austin.....NE SW NE 22-6s-9e
Flowed 64 bbl. oil, 20-qt. shot, Waltersburg 2,244-65 ft.
A. Wilson 2 McCallister-Phillips SE NE NW 22-6s-9e
Pumped 22 bbl. oil, Waltersburg 2,212-56 ft.

ILLINOIS DRILLING REPORT

Bond County

G. Brainard 1 Lindley ..... NE NE SW 26-6n-4w
S.D. 701 ft.
Central States 1 Rich ..... NW SE NE 28-6n-4w
Drilling 1,310 ft.
J. Farrelly 1 Kyle ..... SW NW NW 28-4n-4w
Old T.D. 1,327 ft., fishing 1,417, slight show oil 1,359 ft.
Kingwood 1 Hentz ..... SW NE NW 18-5n-3w
Location.

Clark County

Strickler 1 McFarland ..... NW NE SW 19-10n-13w
T.D. 2,833 ft., P.B. 1,410 ft., testing Carperi sand 1,302-64 ft., show oil in streaks. S.D.
Ohio 1 Davidson ..... N½ NE SE 3-10n-11w
Ste. Genevieve 1,117 ft., Fredonia 1,217 ft., drilling 1,345 ft.

Clinton County

C. Bell et al 1 H. B. Grefeld ..... SE NE NE 30-2n-3w
Pits.
B. E. Martin 1 E. Just ..... NE NE NE 9-2n-1w
Location.
Snell & Goldsmith 1 Schaefer ..SW NE NW 33-2n-3w
Elev. 454 ft., perf. to 2,570 ft., P.B. 2,535 ft., 20 bbl.
L. S. Miller 1 Schmidt.....C E½ W½ SE 35-2n-5w
Drilling 2,005 ft.
Jones, Bechtel & Burgess 1 Hester NW SW NE 35-3n-1w
S.D. 1,380 ft.
Kistler & Strawsey 1 A. Phoenix..NE NE SE 15-1n-1w
Pumped 40 bbl., mostly water, 3-qt. shot, 1,308-15 ft., testing at 1,321 ft.
B. E. Martin 2 Heinzmann.....NE NE NW 9-2n-1w
S.D. 2,080 ft.
W. P. Miller 1 S. P. Taylor....NE SW NE 33-14n-10e
Show oil 80 ft., gas 146 ft., drilling 160 ft.

Crawford County

Fuller et al 1 Barnes 7-5n-11w
Drilling 1,625 ft.
Bell Bros. 1 Geo. Kersey ..... NE SE NE 1-5n-13w
T.D. 2,805 ft., 80-qt. shot, 1,409-51 ft., swabbed water and some oil.
L. A. Plumb 1 Snider ..... W½ NW SW 27-6n-12w
Spud.

Edwards County

Kingwood 1 Shurtleff ..... E½ NE NW 4-1s-14w
10¾-in. 141 ft., drilling 2,287 ft.

Effingham County

Erwin & Barr 1 Dammerman .. NW NW SW 18-8n-4e
T.D. 1,562 ft., pumped 22 bbl., then shot, cleaning out.
R. H. Troop 1 LeCrone ..... NW NW SW 7-8n-4e
T.D. 1,558 ft., pumped 42 bbl. oil and some water, 21 hr., testing.

Fayette County

John Pimmill 1 Isbell ..... NW NE SW 33-8n-1w
Drilling 1,200 ft.

Ford County

Nelson et al 1 Erp ..... SW NW SE 19-24n-7e
Silurian 875 ft., Maquoketa 1,485 ft., Galena 1,688 ft., Decorah 1,880 ft., Platteville 1,890 ft., fishing 2,020 ft.

Franklin County

Manley Oil 1 Downen ..... SW SW SW 26-7s-4e
T.D. 3,118 ft., 1,000 bbl. acid, flowed 50 bbl. an hr., testing through tubing.

Gallatin County

Carter 1 B. M. York ..... SE SE SW 33-7s-8e
Drilling 250 ft.

Henderson County

Media 1 M. L. Evans ..... NW NW NW 18-9n-4w
Drilling 190 ft., first report.

Jackson County

Barton & Shipman 1 P. Mahamy, NE NE SE 20-9s-3w
Derrick.

Jasper County

Pure 1 J. W. Trainer.....W½ NW SE 8-5n-10e
Glen Dean 2,297 ft., Cypress 2,438 ft., drilling 2,585 ft.
Johnson 1 V. V. Hunt ..... E½ SE NE 17-8n-10e
Ste. Genevieve 2,492 ft., Fredonia 2,576 ft., show oil 2,576-8 ft., pay 2,584-88 and 2,594-98 ft., T.D. 2,667 ft., bailed 1 bailer an hr., cleaning out to treat.

Jersey County

Hughes Petroleum 1 Kollali .... SE SE NE 22-8n-12w
Trenton 625 ft., S.D. 905 ft.

Madison County

Aich & Carroll 1 Rinkel ..... SE NE NW 33-5n-6w
S.D. 285 ft.
E. J. Boescke 1 Riegel ..... NW NW SW 17-3n-5w
Louisiana 1,911 ft., Chattanooga 1,927 ft., Devonian 1,986 ft., drilling 2,560 ft.

Montgomery County

Ed Solomon 1 Carroll ..... NE SE NE 3-8n-5w
Drilling 742 ft., 4½-in. 725 ft.
H. C. Retrich 1 W. H. Barnes .. NE NE SE 20-10n-2w
Rig.
Seaboard 1 O. Lay ..... NW NW SE 20-8n-5w
10-in. 163 ft., No. 6 Coal 405 ft., Fredonia 752 ft., Keokuk 1,315 ft., drilling 1,500 ft.
Thorpe & Grant 2 B. Woods .. SW NW NW 32-11n-5w
Drilling 616 ft., good show oil 619 ft.
Swords & Thompson 1 Gett ..... NE SE SE 28-8n-4w
12½-in., 165 ft., drilling.

Randolph County

Rand Dev. 1 Grant ..... SE SE SE 17-5s-5w
Lost circulation 1,495 ft.

Saline County

O. A. Reed 1 S. F. Horney ..... NW SW SE 22-3n-2w
Drilling 185 ft.

Wabash County

Hayes et al 1 Gunfel ..... SE NE 9-1n-13w
Menard 1,995 ft., Waltersburg 2,069 ft., Cypress sand 2,419-27 ft., Ste. Genevieve 2,669 ft., McClosky 2,714-48 ft., S.D. 2,749 ft.

Wayne County

McCoy & Henry 1 Forth ..... SW SW NW 3-2s-6e
Drilling 2,620 ft.

White County

W. C. McBride 1 F. Hon ..... SW SE SW 33-3s-14w
Ste. Genevieve 2,838 ft., pay 2,886-2,905 ft., recovered 25 ft. oil-cut mud.
Mazda & Palmer 1 Lee Storms .. N½ SW SE 26-5s-9e
McClosky 3,132-46 and 3,158-64 ft., 1,000 gal. acid, swabbed 3 bbl. fluid per hr., reacidized with 3,000 gal., no increase, testing.
Arrow Drlg. 1 J. C. Hon ..... SE NE NE 5-4s-14w
Aux Vases sand 2,810-21 ft., show oil, Rosiclare 2,863-71 ft., saturation.
Sitesinger 1 Miller ..... W½ SE NE 8-7s-10e
Menard 2,123 ft., Cypress sand 2,586 ft., Benoist 2,741 ft., drilling 2,795 ft.
Carter 1 B. Questell ..... SW NW SE 2-7s-9e
Benoist 2,830 ft., T.D. 2,865 ft., P.B. to 1,764 ft. to test Dagley sand.
Carter 1 H. Questell ..... NW NE SW 2-7s-9e
Menard 2,245 ft., Tar Springs 2,390 ft., cleaning out 2,393 ft.
Eason 1 L. Morgan.....N½ SW SE 21-3s-8e
Location.

Third Wilcox Sand Discovery In Southwest Texas

By F. L. SINGLETON

CORPUS CHRISTI, Tex., Sept. 30.—The Southwest Texas district received its third Wilcox sand discovery as Edwin M. Jones 1-B West, 2½ miles southwest of the town of George West, Live Oak County, flowed 70.81 bbl. of 47-gravity oil and an estimated 1,500,000 cu. ft. of gas while cleaning out through ⅛-in. choke. Considerable interest was attracted the previous week when 4½-in. drill stem was cemented at 8,367 ft. after the well attempted to blow out at 8,387 ft., the total depth. Details as to where the Wilcox formation was topped were not available, although the well is thought to be producing from the top section of the formation in view of the fact that the section at 8,132-48 ft., which carried an oil and gas odor, was tentatively identified as the lower Carrizo.

The well is located in the L. A. Fant Survey 20, on a geophysical block consisting of several thousand acres. It is the second Wilcox test to be drilled by the company on the block, being located about 2½ miles south of 1 George West, a 10,000-ft. hole which logged favorable showings of oil and gas, but failed to produce commercially when tested. In relation to the Washburn field, a recent Wilcox discovery in La Salle County, the new field is situated downdip about 70 miles southeast and approximately the same distance southwest of the Thomaston field in De Witt County which also produces from the Wilcox.

Since the opening of distillate production from the Carrizo sand in the West Tuleta field, Bee County, earlier in the year, the possibilities of Wilcox production along this particular sector has been greatly enhanced by such discoveries as the Washburn and Thomaston fields. That this type of play will gain momentum in the future is reflected in the large-scale geophysical and leasing activity which is now under way and several large blocks are scheduled for drilling early in 1941.

In the Thomaston field, De Witt County, Atlantic Refining Co. was running tubing in 1 W. E. Conwell preparatory to testing through perforated casing at 9,790-9,815 ft. The hole is bottomed at 9,950 ft., and 5½-in. casing was cemented at 9,950 ft. Should the well be completed for a producer it will open a new producing horizon deeper in the Wilcox as the discovery well, 1 mile to the southwest, was completed as a distillate producer at 7,855-85 ft. Since the top of the Wilcox marker is not available, the present well cannot be correlated with the discovery well which topped the formation at 7,778 ft.

Tide Water 8 Bruni, another Wilcox test located in the old Bruni field, Webb County, is expected to be abandoned at a total depth of 10,295 ft. after the well flowed muddy water for 28 hours when tested through open hole from 8,833 ft. While testing, working pressure on the tubing was 400 lb. This is the deepest test ever drilled in the field and one of the few deep holes ever drilled in the Laredo district below 10,000 ft.

Gas Field Opened in Victoria County

West of Bloomington in the Desiderio Nira Survey, Titanic Oil Co. opened a dry gas field with the completion of 1-A T. C. Edwards which flowed 1,500,000 cu. ft. of gas daily through ⅛-in. choke. This well was originally drilled by John Mayo and Blaffer Drilling Co., and was abandoned at a total depth of 6,265 ft. Production was obtained by plugging back to 5,145 ft., and perforating casing at 5,036-41 ft. The well is about 3,500 ft. southwest of the same company's 1 T. C. Edwards, a dry hole.

Henshaw Brothers 1 Joe Grossman, reported the previous week as a probable pool opener, 3 miles southeast of the Orange Grove townsite, Jim Wells County, is reported to be preparing to drill to the contract depth of 6,000 ft. after making a series of drill-stem tests, one of which is reported to have recovered pipeline oil at 5,132-36 ft. The well is being drilled tight, and information as to where the sand section was topped was not available. The completion of this well would add another producing area to the Wade City-Orange Grove fields, both of which are generally conceded as being located on the same structure, but separated structurally by a graben or fault.

Nueces County Fields

In Nueces County and south of the Shield field, Stanolind Oil & Gas Co. was running casing to test 1 Ocker which is bottomed at 6,632 ft. While sand with an oil odor was cored in the discovery at 6,622-32 ft., a laboratory analysis of the core showed the sand to be carrying salt water, and if this section fails to produce the hole will be plugged back and a test made at 3,026-32 ft. where sidewall cores recovered sand with an oil odor. This is a new sand for the field which was not reported cored in the discovery well. Fred W. Shield 1 Lewis, an offset to the discovery well, which was completed the previous week, is now flowing at the rate of 93 bbl. of fluid per day through a 7/64-in. choke, of which 88 per cent is pipe-line oil and 12 per cent salt water. Tubing pressure was 700 lb. and casing pressure 900 lb.

Wellington Oil Co. 1 Howze, midway between the Minnie Bock and North Clara Driscoll fields, Nueces County, flowed 47 bbl. of oil and 32 bbl. of salt water per day through a 5/32-in. choke. Tubing presure was 140 lb. and casing pressure 620 lb. Production is from sand at 3,819-22 ft.

Another producer was added to the east flank of the Stratton field, Nueces County, when Southern Minerals Corp. 3 Stratton Community flowed 195 bbl. daily through a 5/32-in. choke with 750 lb. working pressure on the tubing and 1,440 lb. on the casing. Drilled to a total depth of 7,206 ft. production was obtained by perforating casing at 6,392-6,410 ft. Location is 933 ft. south of 2 Stratton. While development around the east flank of the structure is in the early stages, development thus far has been encouraging and drilling is expected to be extended over a period of several months.

Jim Hogg Wildcat Indicates Pettus Strike

A new Pettus sand discovery for Jim Hogg County was indicated by the showing of Guy Davis et al 1 Marrs McLean which is drilling in sand and shale below 2,809 ft., following a 20-minute drill-stem test at 2,800-08 ft. which recovered 95 ft. of pipe-line oil and 5 lb. working pressure. The Mirando sand was topped at 2,419 ft., and the Pettus sand at 2,694 ft. Salt water was recovered in a previous test at 2,697-2,705 ft., while another test at 2,796-2,805 ft. recovered 5 ft. of gas-cut mud and 2 lb. working pressure. The well is located in the Las Animas grant, Share 3, Section 4, on strike with the Manila field, a recent Pettus sand discovery.

Drill-stem testing of Magnolia 1 Duval County Ranch Co. showed promise of opening a shallow discovery in the western part of Duval County. While the well is drilling deeper below 1,672 ft., shaly sand with an oil odor was cored at 990-1,000 ft., and 1,000-06 ft., where drill-stem testing recovered 60 ft. of oil and mud, and tested 250 lb. working pressure. Location is in the G.C.&S.F.R.R. Survey 289.

Balcones Fault Line

Fred Pederson 1 Brown, a deep test located in the Tangleford area, Lee County, has successfully squeezed off perforations in the Travis Peak at 8,722-37 ft., and at 8,661-94 ft., where salt water was recovered. The operator is preparing to reperforate to test the Pettit formation.

SOUTHWEST TEXAS COMPLETIONS

CORPUS CHRISTI DISTRICT

Aransas County

McCampbell field: Mar Production Co. 1 Williams, 56 bbl., ½-in. choke, perf. casing 7,100-08 ft., T.D. 7,200 ft.

Bee County

Wildcat: Rowe & McBride 1 M. F. Meyers, dry, T.D. 5,110 ft.

Jim Wells County

East Premont field: Magnolia 13 Seeligson, 428 bbl., 11/64-in. choke, perf. casing 6,574-76 ft., T.D. 6,587 ft.

Gallagher field: M. M. Miller 4 Gallagher, 167 bbl., 5/32-in. choke, sand 5,221-35 ft., T.D.

Wade City field: Arkansas Fuel Oil Co. 4 Sachtleben, dry, T.D. 4,964 ft.

Magnolia 3 Schmidt, 120 bbl., ¼-in. choke, perf. casing 4,925-28 ft., T.D. 4,928 ft.

Kleberg County

Kingsville field: G. R. Ditert 2 Henry, dry, T.D. 2,569 ft.

San Patricio County

East Plymouth field: Texon Royalty Co. 1 Mullen, dry, T.D. 4,955 ft.

Wildcat: Norsworthy Production Co. 1 McDaniel, dry, T.D. 6,255 ft.

Victoria County

Heyser field: W. Stewart Boyle 1 White, dry, T.D. 5,750 ft

McFaddin field: Transwestern 16-E McFaddin, 78 bbl., 5/64-in. choke, perf. casing 5,297-5,300 ft., T.D. 5,867 ft.

LAREDO DISTRICT

Duval County

Driscoll field: Continental 55-A Driscoll, 268 bbl., ¼-in. choke, sand 3,322-34 ft., T.D.

Lundell field: Government Wells Oil Co. 43 Lundell, 38 bbl., jetting, sand 1,523-32 ft., T.D.

Magnolia 8 Duval County Ranch Co., 40 bbl., jetting, sand 1,527-35 ft.

Jim Hogg County

Colorado field: Sun 8 Thaxton, 109 bbl., 7/32-in. choke, sand 2,956-67 ft., T.D. 2,972 ft.

Manila field: Achning & Daubert 4 Allen, 35 bbl., 7/32-in. choke, T.D. 2,617 ft.

Adams & Lefevre 3 Wood, 160 bbl., ¼-in. choke, sand 2,628-33 ft., T.D.

Wildcat: Patel Drillers et al 1 Pena, dry, T.D. 1,667 ft.

Starr County

Boyle field: P. R. Rutherford 3 Carruth, dry, T.D. 3,545 ft.

Webb County

Glen field: Transwestern 9-A Bruni, 42 bbl., 3/32-in. choke, sand 2,152-56½ ft., T.D. 2,159 ft.

Wildcat: O. W. Killam 1 Puig, dry, T.D. 2,288 ft.

Zapata County

Blas Uribe field: Martinez et al 1 Bruni, dry, T.D. 921 ft.

Wildcat: Dulup Oil Co. 3 Garza, dry, T.D. 1,731 ft.

SAN ANTONIO DISTRICT

Live Oak County

White Creek field: Coquat, Holland et al 2-A Gayle, 80 bbl., pumping, T.D. 1,313 ft.

J. M. White 3 Marsden, 15 bbl., pumping, perf. casing 1,300-08 ft., T.D. 1,550 ft.

Wildcat: Clark Drilling Co. 1 Odem, dry, T.D. 1,052 ft.

Humphries & Hotchkin 1 Holmes, dry, T.D. 1,838 ft.

C. G. Newton et al 1 Benham, dry, T.D. 2,020 ft.

SOUTHWEST TEXAS DRILLING REPORT

Brooks County

Sun 1 Boedeker, 12 mi. S of Falfurrias, R. Guzman Sur. 16, coring shale 7,851 ft.

West Production Co. 1 Ehlers, 6 mi. NE of Falfurrias, drilling shale 2,775 ft.

Calhoun County

Henshaw Brothers 1 McCamey, Thatcher and Leonard Sur., S.D. 4,700 ft.

Duval County

Humble 1 Mull, Diego Ynojosa grant, dry, T.D. 5,310 ft.

Hidalgo County

Humble 1 American Life, Blk. 13, Mo.-Tex. Ld. & Irrigation Co. subdivision, coring sandy shale 5,857 ft.

Jim Wells County

W. R. Quinn 1 Schumacher, J. Poitevent Sur., dry, T.D. 5,207 ft.

Nueces County

H. H. Howell 1 W. Schulze, Palo Alto grant, drilling shale 4,750 ft.

San Patricio County

Plymouth 1 Hall, 1 mi. NE of East White Point field, T.D. 5,656 ft., fishing for stuck drill pipe.

Starr County

Sun 1 Saenz, 2½ mi. NE of North Rincon field, tested oil and salt water 5,518-90 ft., plugging back to retest.

Wilson County

Walter Nelson 1 Platner, T. E. L. Parrott Sur. 160, drilling shale and lime 3,640 ft.

Willacy County

Pan American 1 Garcia, 14 mi. E of Lyford, drilling shale 8,139 ft.

MICHIGAN OPERATIONS

Rush to Develop Newly Found Allegan County Pool

By OTTO C. PRESSPRICH

SAGINAW, Mich., Sept. 30.—A rush to share in the promise of a confined area of Allegan County's Overisel field developed during the past week, made that sector the most active current field in Michigan as a result of two sizable wells completed in recent weeks by W. L. McClanahan. The state Conservation Department issued 14 Allegan County drilling permits during the week, 13 of them for Sections 9 and 21.

Don Rayburn, codiscoverer of the new Adams field in Arenac County, developed another good producer, his 1 Collins, SE NW NE 22-20n-4e, producing initially after acid at 2,160 bbl. a day. Depth was given as 2,888 ft. That completion gave Michigan fields a combined initial daily production from new wells of nearly 3,100 bbl. as other areas accounted for 10 producers with initial output ranging from 10 to 208 bbl. a day. One small gas well was completed, 11 tests, a majority of wildcat nature, being laid aside as dry, while three locations were abandoned.

A test that gave promise at the first of the week reportedly petered out after a few days. It is Sun 1-A State-Winterfield wildcat, N½ NE SE 35-20n-6w, in Clare County's Winterfield Township. Although reports were that the well flowed better than 100 bbl. an hour by heads a week ago, later developments indicated heavy encroachment of water as preparations were made to acidize. The test is 4 miles north of the Freeman-Redding field. A deep test, Monroe was topped at 3,794 ft. and the hole was drilled into dolomite lime at about 3,798 ft.

Sun Oil, deep-testing No. 1 Kidder wildcat in Section 8-3n-9w of Rutland Township, Barry County, was around 4,100 ft., aiming for Trenton limestone. Traverse was logged at 1,836 ft., Dundee at 2,103 ft., Monroe at 2,149 ft., without appreciable show of oil.

An attempt at new production 3 miles south and east of the Wise pool in Isabella County went for naught as Stewart Oil Co. et al 1 Weidman & McClintic, in 11-15n-3w, was completed dry at 3,755 ft. The test drilled into Dundee water. Cities Service Oil Co., meanwhile, got a 192-bbl.-a-day yield from its 3 Allen in 11-15n-3w of Denver Township. Naturally, production was 35 bbl. a day and 3,000 gal. of acid was used. Cities Service also is starting two gas tests in the area.

In addition to the 14 Allegan drilling permits last week, 18 others were issued for the best week in several months. Clare and Arenac counties each had three, Monroe two, Midland, Kent, Barry, Montcalm, Ogemaw, Lenawee, Ottawa, Osceola, Berrien and Cass one each, bringing the total for the year to 832. Rumors persist of a shallow level oil show in Cass County, near the Indiana line, but major companies declared most of the rumors are without confirmation.

MICHIGAN COMPLETIONS

Allegan County

Clyde Township: H. C. Nelson 1 Balch, SE SE SE 7-2n-15w, dry, T.D. 1,296 ft.
Heath Township: Percy L. Prout 1 Peterham estate, NW NW SE 3-3n-14w, location abandoned.
Howard E. Fowler 1 Japink, SE SE NW Sec. 3, location abandoned.
Hopkins Township: Dapar Oil Co. and C. E. Weller 1 Miller, SE SW SW 8-3n-12w, dry, T.D. 1,592 ft.
Overisel Township: H. C. Nelson 3 Peters, NW NE SW 9-4n-14w, 150 bbl., acid., T.D. 1,477 ft.
James E. Flanigan 1 Engelsman, SE SW SE Sec. 15, 10 bbl. acid., T.D. 1,550 ft.
Gordon Oil Co. 1 Koopman, SE NE SW Sec. 16, dry, T.D. 1,623 ft.
Gordon Oil Co. 1 Slotman, NW NW NE Sec. 21, 110 bbl., acid., T.D. 1,548 ft.
Michigan Devonian Petroleum Co. 1 Hoeve, NE SE NW Sec. 27, 12 bbl., acid., T.D. 1,488 ft.
Salem Township: Lang & Lewis 3 Flwawe, NW NE SW 15-4n-13w, 83 bbl., acid., T.D. 1,592 ft.

Arenac County

Adams Township: Don Rayburn 1 Collins, SE NW NE 22-19n-3e, 2,160 bbl., acid., T.D. 2,888 ft.
Pure Oil Co. 1-A Bryan, NW SW NW Sec. 23, dry, T.D. 3,036 ft.
Clayton Township: W. E. Ross 1 Mutch, C NW NE 9-20n-4e, 613,000 cu. ft. gas, T.D. 1,144 ft.

Chippewa County

Bruce Township: McKee Exploration Club 1 McKee, C NE 18-45n-1e, dry, T.D. 587 ft.

Clare County

Grant Township: James A. McKay 13 fee, SW SW SE 9-17n-4w, dry, T.D. 1,510 ft.
Hamilton Township: Sun 1 McGregor et al, S½ SE SE 15-19n-3w, dry, T.D. 3,827 ft.
Redding Township: Talbot Oil Co. 2-C State-Redding, NE NW SE 32-19n-6w, 208 bbl., acid., T.D. 3,888 ft.

Isabella County

Denver Township: Stewart Oil Co. et al 1 Weidman & McClintic, W½ SW SW 11-15n-3w, dry, T.D. 3,755 ft.
Wise Township: Cities Service 3 Allen, NW SE NE 17-16n-3w, 192 bbl., acid., T.D. 3,745 ft.

Midland County

Porter Township: Daily Crude Oil Co. 1-B Neitzke, NE NW 21-13n-1w, 80 bbl., acid., T.D. 3,383 ft.

Oceana County

Crystal Township: C. W. Teater 1 Skidmore, SE SE NW 4-16n-16w, dry, T.D. 2,385 ft.

Osceola County

Marion Township: Taggart Bros. 42 Perro-Gibson, C SW 24-20n-7w, dry, T.D. 1,402 ft.

Ottawa County

Tallmadge Township: L. D. Hendershott 1 Daling, SW SE SE 14-7n-13w, 40 bbl., acid., T.D. 1,863 ft.

Van Buren County

Arlington Township: Kilgus & Kelly 1 Wright, NE SW SE 17-2s-15w, dry, T.D. 1,102 ft.
Geneva Township: Twin Drilling Co. 1 Barringer, NE SE NE 29-1s-16w, 33 bbl., naturally, T.D. 991 ft.

Washtenaw County

Salem Township: Regis P. Cook 1 Carlton, NW NW NW 31-13-7e, location abandoned.

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Third Deep Test in Northeast Ohio Is Dry in Clinton

By STAFF CORRESPONDENT

NEWARK, Ohio, Sept. 30.—Ten gas wells, 10 dry holes and 5 oil wells were reported in the Ohio fields. In Lake County the East Ohio Gas Co. (Carter) is drilling at 3,640 ft. in the test on the Andrews farm, Lot 90, Kirkland Township. The Clinton sand was at 3,610-20 ft. and was badly broken and dry. The top of the red Clinton was at 3,548 ft. and the red rock was found at 3,621-42 ft. In Lot 15, Concord Township, these operators are drilling at 2,500 ft. in the test on the F. L. Mather farm with the Oriskany sand at 2,010-20 ft. dry.

Athens County

Carthage Township: Ohio Fuel 1 B. G. Chapman, Fraction 4, dry, Berea, T.D. 1,820 ft.

Cuyahoga County

Mayfield Village: Benedum-Trees 1 J. Lockemer, Lot 35, 531,000 cu. ft. gas, Newburg 2,792-2,820 ft. (will acidize later).

Holmes County

Hardy Township: Lydic O. & G. 1 S. Anderson, Sec. 20, dry, Berea, T.D. 869 ft.
Knox Township: Ohio Fuel 1 P. Anderson, Sec. 20, dry, Clinton 3,300-44 ft., broken sand, T.D. 3,373 ft.

Knox County

Butler Township: Upham 1 Walter Busenberg, Lot 7, first quarter, 40 bbl., shot, Clinton at 2,734-85 ft.
Miller Township: Penick et al 1 Clarence Springer, Lot 2, dry, Clinton 2,296-2,315 ft.
Monroe Township: M. Johnson et al 2 A. V. Butterfield, Lot 6, second quarter, 200,000 cu. ft. gas, Clinton 2,519-31 ft., T.D. 2,587 ft.
Perkins 2 fee, Lot 38, third quarter, dry, Clinton, T.D. 2,675 ft.
Pike Township: Upham 1 M. E. Amphries, Sec. 23, 1,660,000 cu. ft. gas, Clinton 2,590-2,615 ft.

Lawrence County

Windsor Township: Ramsey et al 1 H. K. Brammer, Sec. 32, 100,000 cu. ft. gas, shot 6,100 lb. gelatin, Ohio shales 2,070-2,698 ft., T.D. 2,698 ft.

Lorain County

Penfield Township: Ohio Fuel 1 L. M. Betts, Lot 18, 1,400,000 cu. ft. gas, shot, Clinton 2,441-54 ft., T.D. 2,501 ft.

Newark Field—Licking County

Madison Township: Ohio Fuel 1 G. A. Pigg, Lot 11, second quarter, 100,000 cu. ft. gas, shot, Clinton 2,557-92 ft.
Newark Township: Rutiege et al 1 Howard Workman, Church St. at west corporation line, 1,200,000 cu. ft. gas 2 hr. after shot, Clinton 2,315-45 ft. (300,000 cu. ft. naturally).
Lacknette et al 1 H. T. Wright, first quarter, dry, Clinton, T.D. 2,395 ft.
S. D. McCloy 1 Mary Owen, Lot 7, third quarter, 720,000 cu. ft. gas, Clinton 2,315-51 ft.
Dowler O. & G. 2 Mary B. Paramore, west of corporation line on Raccoon Creek, 2,200,000 cu. ft. gas, Clinton 2,304-29 ft., T.D. 2,334 ft.
Richard McCloy 1 Charles Swank, in Newark city limits, 1,200,000 cu. ft. gas, Clinton sand, T.D. 2,475 ft.
Mary Ann Township: Eugene Ridgway 5 Elisa Richards, Sec. 13, 3 bbl., Berea, T.D. 813 ft.

Medina County

Chatham Township: Eaken et al 1 A. D. Lance, Lot 5, Tract 21, 10 bbl., shot, Berea 515-47 ft., T.D. 561 ft.
Sloan & Zook 2 Charles Doane, Lot 4, Tract 16, dry, Berea 295, 309 and 355-80 ft., T.D. 388 ft.
Preston Oil 2 Glenn Garver, Lot 14, Tract 16, dry, Berea (broken), 326-85 ft., T.D. 397 ft.
Harrisville Township: Edson & Son 2 Charles Billman, Lot 61, dry, Berea, T.D. 565 ft.

Meigs County

Bedford Township: A. Roberts 2 John Chaney, Sec. 21, 45,000 cu. ft. gas, not shot, second Berea 1,748-59 ft., T.D. 1,765 ft.

Muskingum County

Harrison Township: Edward M. Shields 1 Lee Updyke, SE Sec. 6, 2 bbl., Medina, T.D. 4,316 ft., well is being plugged.

Noble County

Jefferson Township: C. D. Harper 75 George Dyer, NE Sec. 8, 3 bbl., Macksburg 500-ft. sand, 721 ft.

Perry County

Madison Township: Atha 1 J. C. McCullough, SW Sec. 17, 85 bbl. and 250,000 cu. ft. gas, Clinton sand, 3,125 ft., well had been producing for sometime but had not been drilled through sand and had not been shot.
Reading Township: Ohio Fuel 1 J. A. Miller, Sec. 5, 280,000 cu. ft. gas, Berea 944-52 ft.

Washington County

Barlow Township: Campbell et al 1 J. M. Wickers, Sec. 11, 500,000 cu. ft. gas, Macksburg 800-ft. sand 1,214-59 ft.
Ludlow Township, Depuy 5 H. W. Winland, Sec. 34, 50,000 cu. ft. gas, Injun and Berea, T.D. 1,960 ft.
Warren Township: McVey 1 A. F. Staey, Sec. 7, 100,000 cu. ft. gas, Maxon 1,412-22 ft.

INDIANA

EVANSVILLE, Ind., Sept. 30.—W. C. McBride, Inc.'s important test immediately south of the town of Vincennes is showing up as a possible important pool opener. For some time, the Griffin pool in Posey and Gibson counties has been Indiana's only active area. Outside of this area, the state's main production came from two areas, the Sullivan-Vigo County district and the district in eastern Gibson and western Pike counties. Across the Wabash was Illinois' most prolific old pool, the Lawrence County field. McBride 1 Winckler, SW SW SW 24-2n-11w, is in a formerly nonproductive area in the triangle formed by these three districts. The well swabbed 130 and 116 bbl. respectively the first and second days of testing and after acidization it flowed 658 bbl. from the McClosky at 1,872-81 ft.

Completions were above normal as nine producers, three gas wells and only three dry holes were recorded during the week. As usual, the bulk of the completions were in the Griffin-Posey county area, but three small pumpers were brought in in Spencer County where there has been considerable drilling of late.

INDIANA COMPLETIONS

Daviess County

J. W. Cannon 3 Evans.....SE SE NE 8-2n-5w
Pumped 15 bbl. oil (est.), 620-26 ft., and 230,000 cu. ft. gas 613-16 ft., T.D. 626 ft.

Gibson County

Roberts Bros. 1 Hall.....NW NW NE 20-1s-11w
1,500,000 cu. ft. gas and spray water, T.D. 2,350 ft., P.B. to 1,780 ft., perf. 1,750-65 ft.
Continental 8 Keck.....SW SW SW 27-3s-14w
Flowed 594 bbl. oil and 500,000 cu. ft. gas, 2,000 gal. acid, T.D. 2,884 ft.
Continental 3 Kliederer.....SE SE SW 26-3s-14w
Pumped 93 bbl. oil 2,086-2,108 ft. and 2,527-39 ft., T.D. 2,949 ft.
Papoose 10 Cooper-A.....NE NE NW 13-3s-14w
Pumped and flowed 300 bbl. oil, 40-qt. shot 2,486-99 ft.
Papoose 14 Cooper-A.....NE NE SW 13-3s-14w
Location abandoned.

Marion County

J. W. Adams 1 Kleiman.....SW SE NE 22-16w-5e
55,000 cu. ft. gas, Trenton 994-1,000 ft., T.D. 1,055 ft.

Posey County

Jarvis Bros. 1 Murphy.....SW SE SE 35-3s-13w
Dry, Ste. Genevieve 2,714 ft., T.D. 2,885 ft.
L. & G. et al 1 Maier.....NW SW NW 33-3s-13w
Pumped 115 bbl. oil, 20-qt. shot 2,442-5 ft.
H. Sandler et al 5 Keck.....SE SW NW 34-3s-14w
Pumped 155 bbl. oil, 20-qt. shot 2,790-2,808 ft.

Potter County

Roung & Lowe 1 Nielson.....NW SW NW 28-36n-5w
Dry, 291 ft.

Spencer County

H. M. Hunt et al 1 Lusk.....E½ NE NE 5-8s-6w
500,000 cu. ft. gas 600-13 ft.
Ky. Nat. Gas 1 Geoger.....NW NE 31-7s-6w
Pumped 21 bbl. oil, drilled deeper 930-36 ft.
Damron 2 Boyd.....SW SE SE 30-7s-6w
15 bbl., T.D. 928 ft.
L. L. Benoist 1 Abbott.....NE NE NW 7-7s-7w
Dry, H.F.W. 1,054-56 ft.
B. Hoover 2 Rothert.....SW NW NW 1-5s-7w
Pumped 5 bbl. oil, 100-qt. shot 725-58 ft.

INDIANA DRILLING REPORT

Daviess County

Newton P. L. 1 Dorsan.....NW SW SE 35-2n-5w
Ste. Genevieve 597 ft., drilling 710 ft.
Ben Ruble 2 B. L. Walker.....NE SE SW 4-2n-5w
Paoli 577 ft., S.D. 585 ft.

Gibson County

Midwest et al 4 Bryant.....NE NW NE 15-2s-9w
Glen Dean 1,178 ft., show oil 1,367-78 ft., water 1,378-89 ft., H.F.W. 1,445 ft., drilling 1,465 ft.

Knox County

W. C. McBride 1 Winckler.....SW SW SW 24-2n-11w
Swabbed 130 bbl. first day, 116 bbl. second day, flowed 658 bbl., 2,000 gal. acid 1,872-81 ft., T.D. 1,881 ft.

Posey County

Basin Drlg. et al 1 Oakland City College.....
SW SW NW 16-8s-14w
Kincaid 1,520 ft., Degonia 1,597 ft., Clore 1,631 ft., Palestine 1,718 ft., Menard 1,752 ft., drilling 1,800 ft.
C. T. Somers 1 Hill.....NE NE NE 2-4s-14w
Glen Dean 2,460 ft., drilling 2,500 ft.

Spencer County

Snell et al 1 Graham.....SE NW NE 15-6s-7w
Golconda 1,175 ft., Barlow 1,292 ft., slight show oil 1,320-45 ft., Bethel 1,355 ft.

Warrick County

Yankeetown Dev. 1 Taylor.....SW SW NW 10-7s-8w
H.F.W. 1,030 ft.

EASTERN KENTUCKY

ASHLAND, Ky., Sept. 30.—One of the best gas wells to be drilled in eastern Kentucky was reported here by the Kentucky-West Virginia Gas Co. The well was No. 5274 on the J. G. Carlisle land on Big Branch of Little Mud Creek in Martin County. The well reached a total depth of 2,895 ft. in white slate and has a production of 4,500,000 cu. ft. of gas after lime was acidized.

Operations continued on the same general level in other parts of eastern Kentucky but several wells are nearing completion depths and will probably be drilled in during the next week or so.

In Laurel County interest is centered on efforts to start what is being termed a deep test well on the Stinking Creek dome. According to information received Eversole et al (a London, Ky., local group interested in gas business), are going to contract the well with the Stanolind Oil & Gas Co. reported interested in the operation. An October first extension was granted on the option with Mr. Graham, an operator scheduled to move from Clay County, to drill the well.

WESTERN KENTUCKY

OWENSBORO, Ky., Sept. 30.—Four producers and five dry holes were completed in western Kentucky during the past week. Three of the producers were Jett sand wells in the Handyville district of Daviess County. Another dry hole was drilled in the newly discovered Hebbardsville pool.

Daviess County

Handyville district: Hupp & Cameron 4 Lula Akins, 40 bbl., 150-qt. shot, Jett 1,220-42 ft.
Master 1 E. W. Richmond, est. 50 bbl., 60-qt. shot, Jett 1,205-28 ft., T.D. 1,233 ft.
Ohio 5 Steve Coomes, 125 bbl., 95-qt. shot, Jett 1,230-55 ft., T.D. 1,256 ft.
Stewart & Snyder 8 Anna Ezell, moving in.
Utica district: Daugherty 10 Rex O'Flynn, dry hole through Cunningham, T.D. 1,485 ft.
Jess Smith et al 1 Mary B. Murphy, lost tools and abandoned at 1,025 ft.
O. D. Vickers et al 4 William Johnson, East tract, location.

Henderson County

Hebbardsville district: Hupp & McCummings 1 Otto Busby 50 acres, dry hole through Jett, T.D. 1,543 ft.

Ohio County

Fordsville district: R. R. Hart et al 5 Clark heirs, 15 bbl., 20-qt. shot, Jett 290-95 ft., T.D. 299 ft.
Pattyville district: P. P. Murphy et al 4 Daniel Carden, dry hole through Jett, T.D. 322 ft.
Maxwell district: D. T. Boling 3 W. H. Hamilton, dry hole through Jett, T.D. 967½ ft.
Dundee district: Sohio 7 J. E. Mitchell, drilling at 125 ft.

North Central Texas

(Continued from Page 73)

Baylor County

Rogers & Lanfair 1 Howe, J. Lowe Sur., Abst. 572, S.D.O. 2,215 ft.

Clay County

W. B. Omohundro 1 Ida Wynn, Sec. 2, T.&N.O. Sur., old well drilled deeper from 6,070 ft., drilling 6,450 ft.
L. T. Burns 1 Calloway, Lot 9, Hopkins County School Lands Sur., Abst. 176, T.D. 5,356 ft., new contract depth 6,000 ft., rigging up and S.D.
Horton & Wiggins 1 W. J. Howard, Blk. 31, T. J. Belcher Sur., drilled saturation 5,460-81 ft., D.S. test showed 40 ft. oil-cut mud, T.D. 5,604 ft., P.B. to 5,488 ft. and set 5½-in. casing 5,460 ft., flowing 10 to 12 bbl. an hr., re-treated with 5,000 gal., est. 250 bbl. oil per day, still testing.
Omohundro 1 Kempner, Bosque County School Land, old T.D. 4,268 ft., T.D. 5,643 ft., fishing.
Roberts, Lynch & Jones 1 Edwards, Blk. 40, Madison County School Lands Sur., 6,500-ft. test, drilling 6,175 ft.
Walter Gant 1 Stine, Sec. 25, H.&T.C. Sur., 6,000-ft. test, 10-in. at 510 ft., drilling 4,605 ft.

Denton County

Amon G. Carter 1 W. P. and A. P. Allen, S. Westbrook Sur., S.D. 4,000 ft., planning to drill deeper.
Harvey Bros. 1 Knox, R. Howard Sur., Abst. 542, old T.D. 1,357 ft., show oil 1,467-93 ft., set 6⅝-in. at 1,465 ft., drilled plug, show oil and gas, testing.

Grayson County

Texas Co. 1 Hutchinson, Samuel Stewart Sur., northeast corner of county, 7,500-ft. test, drilling 260 ft.

Hardeman County

Norris & Gilbert 1 Robert Weekley, SW SE Sec. 87, Blk. 16, H.&T.C. Sur., show oil in lime 3,810 ft., drilled saturation 3,810-70 ft., show oil in lime 3,867-3,906 ft., 7-in. 3,906 ft., perf. and tested water, S.D.O.

Jack County

Continental 1 Robertson, M. J. Swan Sur., Abst. 1650,

4,600-ft. test, show oil 4,643-62 ft., 7-in. 4,643 ft., drilling plug.
R. A. Conkling 1 M. Hoofle, A. James Sur., Abst. 318, 3 mi. S Antelope, 3,500-ft. test, S.D. 2,410 ft.
Rathke Oil 1 Moseley, J. Harrison Sur., Abst. 259, drilling 4,195 ft.

Montague County

Walter Gant 1 Will Laird, R. T. Millard Sur., Abst. 470, 7 mi. W of Sunset, 6⅝-in. casing at 6,641 ft., T.D. 6,651 ft., preparing to perf. casing and test.
Hults-Owens 1 Tucker, NW cor. Sec. 2836, T.E.&L. Sur., slight show of oil 5,020-34 ft. and 5,210-26 ft., drilling saturation 6,010-50 ft., cemented casing 6,016 ft., drilled plug, well flowed to clean itself, now preparing to run tubing, est. 1,000 to 1,200 bbl. daily, natural, S.I. for pipe-line connection.
A. R. Dillard 1 Holland, M. Montalba Sur., 10-in. set at 375 ft., drilled saturation 5,505-13 ft., S.D. 5,991 ft.
Seitz, Comegys & Seitz 1 Harris, B.B.B.&C. Sur., 10 mi. S of St. Jo, 6,000-ft. test, drilling 5,180 ft.

Wichita County

E. P. Bowen 1 F. M. McKinley, William Anglin Sur., 2 mi. N Wichita Falls, contract depth 4,500 ft., drilling 3,030 ft.

Wilbarger County

Charles Barnes and R. A. Andrews 1 Clarida, NE Sec. 97, Blk. 14, H.&T.C. Sur., first report.
Amerida 1 Parker, Sec. 36, Blk. 15, H.&T.C. Sur., 5½-in. 4,407 ft., show oil 4,437-55 ft., W.O.C.

Wise County

Cranfill & Rogers 1 McKay, Sec. 8, Falls C.S.L. Sur., drilling conglomerate showing oil 5,707-10 ft., cored 5,710-14 ft., test showed only mud, D.S. test 5,852-75 ft., showed 3 ft. oil and 70 ft. mud in 45 min., fishing drill pipe 6,067 ft.

WEST CENTRAL TEXAS

The third well in the recently discovered Dobbs pay 2 miles south of Carbon blew in during the week to indicate the largest well completed in Eastland County in several years. It is C. L. Mahaney 1 Jackson, S. H. Key Survey. The discovery well was brought in by W. J. Dobbs Oil Corp., Dallas, 1 Greer, in the summer of 1939. Several attempts were made to extend the production during the following months, however, none succeeded. Early in June Dobbs Oil Corp. 1 Thomasson, S. H. Key Survey, ¼ mile northwest of the discovery, was completed for 243 bbl., flowing, from the Caddo lime from 2,560 to 2,658 ft., there being 95 ft. of saturation reported.

The C. L. Mahaney well is about ¼ mile west of the Dobbs 1 Thomasson. The Caddo lime was reported topped 16 ft. higher than its east offset and a total of 97 ft. of saturation was reported drilled. The large flow of the new well was following a 300-qt. shot. Mahaney has made location for two additional tests in the area and Dobbs Oil has set stake for a north offset to the new completion.

Jones County Discovery

The new Jones County discovery indicated a week ago has definitely opened new production. It is King Oil 1 Olson, NE NE Section 189, B.B.B.&C. Survey, about 1½ miles north of production in the Avoca field. Casing was cemented about 15 days ago and when plug was drilled the past week oil rose 3,000 ft. in the hole. The pay section is the Palo Pinto lime drilled from 3,207-38 ft. While tubing was being run the well headed 80 bbl. of oil in 30 minutes.

Also in Jones County Humble Oil & Refining Co. has staked an outpost test to the new Flippen lime area opened by Jones & Stasney 2 miles north of the town of Avoca. The new Humble test is 1 Rossenwasser, 330 ft. from the west and 413 ft. from the south lines of E½ Section 192, B.B.B.&C. Survey. It is east of 1 Humphrey which opened the shallow area while prospecting for a deeper Palo Pinto lime area.

Haskell Wildcat

Location has been staked and rotary rig was being moved in for a wildcat test on the Coody ranch 12 miles east of Haskell in Haskell County. It is on a block assembled by Bradford & Robertson and S. B. Roberts and J. C. Hunter. Location for 1 Coody is 1,400 ft. from the south and west lines of the N. Haggard Survey. It is projected to the Palo Pinto lime.

WEST CENTRAL TEXAS COMPLETIONS
(24-hour gages)

Callahan County

Semiwildcat: Lee 2 Harris, Sec. 99, B.B.B.&C. Sur., dry at 1,293 ft.
Wildcat: Merry Bros. & Perini 1 Yost, Sec. 18, S.P Sur., top Palo Pinto 3,128 ft., dry at 3,220 ft.

Brown County

Cross-Cut field: G. Eakin 3 Williams, 8 bbl., pumping, 10 qt., 1,080-1,100 ft.

Coleman County

Novice field: McKissick 1 Sealy-Smith, dry sand 3,595-3,603 ft., dry at 3,622 ft.
Bradford & Robertson 3 Morris, 102 bbl. 6 hr., ¾-in. choke, 30 qt., 3,583-3,603 ft.

Concho County

Wildcat: Byerly 1 Rice, Sec. 18, I.&G.N. Sur., Abst. 1413, old well reinstated to deepen July 9, 1940, second completion dry 1,850 ft.

Jones County

Sayles field: Lewis Prod. 8-D Sayler, 60 bbl. in 19 hr., pumping, 500 gal., 1,892-1,902 ft.
Wildcat: Charter Oil 1 Nobles, B. Trevinio Sur. No. 190, lime show oil 2,151-60 ft., 2,225-47 ft., dry 2,302 ft.

Shackelford County

Sedwick field: Crites 1 Green, dry at 576 ft.
Roak 14 Hickman, 47 bbl., pumping, 673-77 ft.
Roark 1 Crow, dry at 848 ft.
Wildcat: Roak 1-42 Nail, Sec. 42, E.T. Sur., H.F.W. sand 1,135-43 ft., dry at 1,143 ft.
Bluff Creek field: Hickok & Reynolds 2 Morris, 15 bbl. in 24 hr., pumping, 1,452-58 ft.

Stephens County

Stribling field: Falcon Oil 2 Robertson, 144 bbl. in 6 hr., 34/64-in. choke, 3,000 gal. 3,582-3,616 ft.

WEST CENTRAL TEXAS DRILLING REPORT

Callahan County

N. D. Gallagher 1 E. Grisson, SE part Sec. 2, Blk. 8, S.P. Sur., top lime 1,695 ft., fishing, underreaming lugs at 1,700 ft., T.D.

Coleman County

Stuard 1 Minear, E. V. Otaw Sur. 244, location.

Comanche County

C. D. Lane 1 H. W. Strout, 3,080 ft. from N, 2,200 ft. from E lines of E. D. Corbett Sur., Abst. 154, 6⅝-in. casing 2,900 ft., drilling 3,015 ft.
Lone Star 1 Watkins, Sec. 30, Blk. 3, B.B.B.&C. Sur., 3,000-ft. test, drilling 1,710 ft.

Eastland County

Dobbs Oil 1 Poe, Sec. 37, Blk. 3, H.&T.C. Sur., water sand 1,581-97 ft., set 6⅝-in. casing 1,587 ft., drilling 2,150 ft., last report.

Fisher County

F. A. Stephenson 1 Maberry, SE SW Sec. 56, Blk. 1, H.T.&B. Sur., 3,400-ft. test, cored 3,285-3,302 ft., recovered sand showing oil, set casing, drilled plug, 800 ft. O.I.H., S.D. 3,302 ft., 5½-in. at 3,271 ft.
General Crude Oil 12 Flanigan, center of old Royston field, Ordovician test, 18⅝-in. casing 80 ft., drilling 1,708 ft.

Hamilton County

A. J. Caldwell 1 W. W. Jones, 1,002 ft. from NE, 150 ft. from SE lines of W. H. Crowder Sur., S.D. 3,010 ft.
C. J. Meyers 1 Oats, 420 ft. from S and 1,035 ft. from E lines F. Hughes Sur., 4,000-ft. test, location.

Haskell County

Bradford & Robertson et al 1 Coody, SW cor. N. Hapgood Sur., Palo Pinto lime test, first report.

Hood County

Aztec Oil 1 Gallagher, 500 ft. from S and 1,326 ft. from E lines of Robert Alway Sur., 3,000-ft. test, location.

Jones County

T. D. Humphrey 1 Leslie & Lipman, 2,705 ft. from N and 4,320 ft. from E lines of Sec. 18, Blk. 15, T.&P. Sur., 2,800-ft. test, location.
J. C. Hunter 1 Strand, SW NE Sec. 5, Blk. 5, H.&T.C. Sur., drilled saturation 3,426-28 ft., top Palo Pinto lime 3,418 ft., running 6⅝-in. casing for completion.
Best 1 A. A. McDuff, 5,200 ft. S, 1,100 ft. E lines of J. J. Hughes Sur., set 6⅝-in. casing at 2,040 ft., S.D.O. 2,393 ft.
King Oil 1 Olson, NE NE Sec. 189, B.B.B.&C. Sur., prepare acidize Palo Pinto lime 3,207-33 ft., well made 80 bbl. in 30 min.

Parker County

Brown & Gardner Bros. 1 Gilbert, T.&P. Sur., Abst. 1958, casing set 3,905 ft., est. 500,000 cu. ft. gas and spray oil, slight show oil 4,405-15 ft., T.D. 4,8080 ft., fishing tools.
C. Leidecker and William Holland 1 J. A. Boyd, NE NE of S 100 acres of A. J. Edwards Sur., 4,500-ft. test, S.D. 2,410 ft.

San Saba County

Three Widows Oil 1 Ballard, NW cor. S½ Sec. 80, H. Behrenroth Sur. 506, 2,000-ft. test, S.D. for 10-in. at 450 ft.

Shackelford County

Tal Vez Oil 1 Dyer, Sec. 83, Blk. 12, T.&P. Sur., drilling 1,000 ft.
Carson 1 Elliott, Sec. 49, B.A.L. Sur., resumed drilling after being S.D. at 1,685 ft., Caddo lime test to 3,620 ft., 10-in. casing at 1,685 ft., set 8¼-in. 2,170 ft., drilling 2,700 ft.

Stephens County

Gourley & Fagg 1 Rogers, Sec. 28, Blk. 5, T.&P. Sur., drilled saturation 3,663-80 and 4,010-26 ft., cleaning out, top Ellenburger 4,318 ft., drilling 4,335 ft.

Tarrant County

Hickey 1 Baltzelle, NE cor. William Scott Sur., T.D. 930 ft., drill pipe froze.

Taylor County

Ce-beth Oil 1 City of Abilene, south shore of Lake Abilene on city property, 4,000-ft. test, corrected report, drill pipe stuck, T.D. 1,940 ft., S.D.
K. B. Nowles 1 Hardin-Simmons Univ., S½ NW Sec. 36, Lunatic Asylum lands, 9½ mi. S Abilene, first report.

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Rocky Mountain Area Quiet With Routine Completions

By T. R. INGRAM

DENVER, Colo., Sept. 30.—The Rocky Mountain area had nine completions, of which six were oil wells, two were dry holes, and one was a gas well. The best completion was Ohio Oil 17 Lamb, in Lance Creek, for 1,080 bbl., and next best was same company's 17 Carrie Putnam, also in Lance Creek, for 688 bbl. The largest well completed in La Barge field this year was Marvel Oil 1-I Government which flowed 300 bbl., initially. Cut Bank had one completion, a 35-bbl. well for A. B. Cobb 7 Walburger. R. C. Tarrant 1 Lang, Pondera County, 6 miles south of Cut Bank, had water in the Cut Bank sand and was abandoned. Vander Pas-Thompson 3 Thumm, in Kevin-Sunburst, made 30 bbl., and Aaron A. Welch 4 Zachor was dry in the contact. The Petroleum Products Corp. 11 Hospah, McKinley County, New Mexico, made 72 bbl., initially. Claude Carroll 1 Cornell, in Fulcher basin, was a gas well.

New operations include a location for 5 Unit, on Wilson Creek by Texas and California companies' No. 1 in Cut Bank, No. 3 in Kevin-Sunburst, and No. 1 in McKinley County, New Mexico.

COLORADO

Archuleta County

California-Colorado 2 Macht....NE SW NW 32-36n-1w
Spudding in 15-in. hole with cable tools, to go to 2,640 ft.

Fremont County

U-Tex Oil 1 Hassler.....NE 28-20s-69w
Spudding.

Garfield County

Joe T. Juhan 1 Clough.....NW SE 22-6s-94w
Drilling 210 ft.

Huerfano County

Harold F. Collins et al 1 Bartlett-Howard, SE NW 3-28s-68w, La Veta district, which has been shut down at 480 ft. since last January, has let contract for completion of test. It encountered a brown lime at 460 ft. showing some saturation. It will be acidized and tested.

Jackson County

W. N. W. Corp. 1 North Park Coal, NW NW 18-9n-78w, North McCallum structure, is delayed by caving hole at 4,350 ft., total depth, and is underreaming and cleaning out at 4,100 ft. in an attempt to land 8¼-in. on bottom.

Logan County

West Plains 1 Sheldon.....SE NW SW 3-10n-55w
Drilling below 2,000 ft. after shutting off water with 10¾-in. at 1,736 ft.

Moffat County

Steamboat Springs Synd. 1 Sutton NE NE SW 1-5n-96w
Drilling 2,287 ft. in pink shale and sand.
Texas 2 Wick.....Lot 9, 10-4n-91w
T.D. 4,555 ft., installing pump.
Mountain Fuel Supply 6-B Wilson NW SE 14-12n-100w
Drilling 2,757 ft., saturated sand at 2,708-52 ft.
Texas 6 Knowlton.....SE cor. Lot 8, 10-4n-91w
Drilling 4,553 ft., old well drilling deeper from 3,930 ft.

Ouray County

Ridgway Petroleum 1 Bennett.....NE SE 2-45n-8w
Drilling 700 ft. in Benton shale.

Park County

South Park Oil 1 Lemar.....NE NE SE 34-11s-75w
Drilling 7,451 ft. in brown sand showing oil and gas.

Rio Blanco County

Texas Co. has released location for 5 Unit, 729 ft. from east line and 591 ft. from north line, 34-3n-94w, Wilson Creek. It is about midway between the discovery well in 35-3-94 and 2 Unit in Section 27, and 1 mile north and a little west of 4 Unit, a near completion. It is approximately on the same structural contour as the discovery well. It is a joint operation with the California Co.

Routt County

Craig-Moore 1-X Irwin..... SW NE 33-7n-85w
Drilling in red beds at 2,410 ft.
Mid-Colorado Pet. 1 Omholt ... NE NE SE 29-4n-87w
Resumed at 3,150 ft. in Morrison. (Fish Creek).

WYOMING

Big Horn County

N. B. Ketchersid 1 Mann SW cor. Lot 42-J, 11-55n-97w
Building rig.

Prescott & Mileski 1 Government.....1-51n-93w
Drilling 1,360 ft.

Carbon County

Producers Oil 1 Lake Valley.....CNL 14-20n-88w
T.D. 3,752 ft., changing over from cable tools to rotary.

Crook County

Vickers-Continental 1 Duncan-Lobban .....
NE NW SW 28-57n-64w
T.D. 1,620 ft., fishing.

Hot Springs County

J. W. Bales 1 Government..CWL NW SE 21-42n-90w
Drilling at 850 ft. after shutting off water in Muddy sand at 702-20 ft.

Lincoln County

Ella B. Newton 1 Howard.....18-25n-113w
Drilling 300 ft., contract depth 2,000 ft. South flank of La Barge field.
H. C. Harris 1 Government..SE NW NW 23-21n-117w
Drilling 3,190 ft. in lime.
Fontenelle Dev. 1 Pomroy.....NE SW 5-24n-113w
Drilling 1,450 ft.
Robert Miller Taylor 1 State....NE cor. 36-25½-115w
Drilling 2,053 ft.

Natrona County

Connelly Drilling 1 State.... SW SW NW 36-36n-81w
T.D. 1,712 ft., underreaming to set 4½-in.
General Petroleum 5-16-S ... NW NW SW 16-35n-77w
T.D. 500 ft., cemented 11¾-in. at 340 ft.
Royalty Oil 1 Midert ..... SW SW SW 26-35n-80w
T.D. 1,555 ft., drilling water well.
General Petroleum 7-22-P.... NW SW SW 22-35n-77w
T.D. 4,570 ft., rigging up pump for test of Shannon sand.

Niobrara County

Lance Creek had two completions, both inside wells. Ohio 17 Lamb-Account 1, NW NW NE 5-35n-65w, was completed at 5,490 ft., total depth, in the Leo formation and made 1,080 bbl. in 24 hours on official gage. The 7-in. was set at 5,262 ft.

Ohio 17 Carrie Putnam, NW SE SW 33-36n-65w, made 688 bbl. the first 24 hours flowing through open tubing at 5,480 ft., total depth, in the Leo with the 7-in. set at 5,317 ft.

Continental 21 Tom Bell ..... NW SE SE 33-36n-65w
Location.
Ohio 9 State.....NW SW NW 36-36n-65w
Drilling 3,490 ft.
Argo 15-A Elliott.....SE NE NE 6-35n-65w
Location.
Continental 6 Apex-3.....SE NE NE 34-36n-65w
T.D. 5,353 ft., Leo sand 5,316-50 ft., swabbed and flowed 185 bbl. then 192 bbl. and 154 bbl. on 24-hr. tests after acidizing.
Continental 12 Rohiff.....SW NW SW 32-36n-65w
T.D. 5,350 ft., testing, flowed 18 bbl. first 30 minutes.
Continental 20 Tom Bell.....NW SE SE 33-36n-65w
Drilling 3,743 ft., top of Muddy 3,165 ft.

Sublette County

The La Barge field had its largest well of the year in Marvel 1-I Government, SE NE SE 28-27n-113w, which flowed 300 bbl. the first 24 hours at 1,126 ft., total depth. The 7-in. was set at 963 ft.

North La Barge Oil 1 Govt. ..NE SE NE 28-27n-113w
T.D. 984 ft., old well drilling deeper, rigging up.
North La Barge Oil 1 Good-Nothing .....
SW SW SE 16-27n-113w
T.D. 1,933 ft., preparing to test.
North La Barge 1 State.....SW SW SE 16-27n-113w
Rigging up.

Sweetwater County

Sinclair-Wyoming 75-A .....NW SW NW 11-26n-90w
Drilling 4,178 ft. in Tensleep.
Farson Oil & Gas 1 Government..SE NE 18-25n-108w
Drilling 1,239 ft., in Wasatch.
Union Gas 1 Hummer ..... NW NW NE 6-17n-103w
T.D. 2,110 ft., rigging up rotary.
Red Desert Corp. 1 Aspden NW SW NW 34-18n-103w
T.D. 3,976 ft., cemented 8⅝-in. on bottom.

Uinta County

McCurdy-Morgan 1.....SE SW SW 32-19n-116w
Spudding 60 ft. (Cumberland district).
Elvnor Oil 1.....NE SE SE 6-18n-116w
T.D. 805 ft., reaming below 700 ft. to land casing on bottom, water sand at 598-600 ft.

Washakie County

J. E. Longnecker 1.....CSL SW NE 24-47n-90w
Drilling 46 ft., 8¼-in. cemented 16 ft., show oil 44-46 ft. (Sherard structure).

MONTANA

Frank C. Weems, examiner for the Interstate Commerce Commission, conducted hearings at Great Falls the past week on the petition of producers in the Cut Bank field for authority for the Great Northern and Northern Pacific railroads to reduce their rates on crude from Cut Bank to Pocatello, Idaho, from 31 cents to 22 cents per cwt. This reduction, they claimed. would equalize the rate from Lance Creek to Pocatello and permit Cut Bank operators to compete with Lance Creek producers in the Idaho market and also put the rate on a parity with that from Cut Bank to Spokane, Wash.

Blaine County

Cherry Ridge Synd. 1 Harbolt..NW NW SW 1-35n-20e
Drilling 1,140 ft., water and show of oil at 667 ft., cased off.

Carbon County

Continental 1 Prigge .....SE SE SE 33-9s-25e
T.D. 3,562 ft., rigging up to pump.

Garfield County

H. H. Schwartz, Jr., 1 Charles....SE NW 21-15n-30e
Cemented 8-in. at 2,375 ft.

Glacier County

Cut Bank had one completion and one new operation. A. B. Cobb 7 Walburger, NW SW SW 35-35n-6w, swabbed 35 bbl. the first 24 hours at 2,854 ft., total depth. The Sunburst at 2,768-73 ft. was dry. The Cut Bank was at 2,790-2,851 ft. with a shale break at 2,799-2,802 ft.

Kullberg 1 Tribal.....NE cor. Lot 3, 19-32n-5w
Building rig. First report.
Santa Rita 12 Tribal .....SW SW 10-35n-6w
Cemented 10-in. at 594 ft., top Colorado 587 ft.
Texas 4 Unit 11.....CWL NW SW 11-35n-6w
Cemented 10-in. at 678 ft., top Colorado 647 ft.
Montana-Dakota 1 Tribal-112 SW NW NE 16-35n-6w
T.D. 2,685 ft., cleaning out and lowering 8⅝-in. to shut off water.
Montana Headlight 7 Britton...NW NW SE 11-34n-6w
Cemented 10¾-in. at 523 ft., top Colorado 523 ft.
M. R. Wagner 1 Tribal-184.....NE NE NE 13-32n-6w
Drilling 2,914 ft., 1,800 ft. oil in hole, 7-in. at 2,893 ft.
Texas 9 Unit 9 .....NW SW 9-32n-5w
Cemented 10¾-in. at 625 ft., top Colorado 600 ft.

Hill County

William M. Hanlon 1 Government, SW NE 10-37n-15e, a 3,800-ft. test to the Madison which spudded last June and shut down awaiting issuance of federal lease, is expected to resume at once following the granting of a lease on 1,573 acres in Sections 6, 9, 19, 20, 29, and 32-37n-15e. State and fee land in the block bring the total up to around 50,000 acres.

Pondera County

R. C. Tarrant 1 Lang, SE SE NW 14-31n-5w, a test 6 miles south of the Cut Bank field searching for the shoreline which is productive to the north, found water in the Cut Bank sand at 2,790-2,840 ft., and was plugged and abandoned. It had three bailers of water an hour at 2,835-40 ft. The Sunburst at 2,685-2,705 ft. had a show of oil.

Toole County

Kevin-Sunburst had two completions, of which one was a dry hole.

Vander Pas-Thompson 3 Thumm, CSL NW NW 33-35n-3w, pumped 25 to 30 bbl. a day at 1,711 ft., total depth, from the contact at 1,706 ft. after acidizing with 1,000 gal.

Aaron A. Welch 4 Zachor, CSL NW NE 29-35n-1w, was dry in the contact at 1,549 ft., also total depth, and was abandoned.

Texas 9 Swears.....SE SW SW 9-35n-2w
Location. First report.
Consolidated Gas 2 Haukland....SE SE SE 28-33n-2w
Drilling 650 ft. First report.
C. D. and H. O. Stock 6 Haggerty...SE cor. 13-35n-2w
Drilling 420 ft. First report.
Frank P. Walsh 1 Mowat .....SW NW SE 7-33n-2e
Drilling, 1,188 ft., in Colorado shale, est. 4,000,000 cu. ft. gas at 1,185 ft.
Twinfields Oil 1-A Government NW NW NW 28-35n-3w
T.D. 1,785 ft., contact 1,783 ft., acidized 500 gal., installing pump.

NORTHWEST NEW MEXICO

McKinley County

Petroleum Products Co. 11 Hospah, SE NW SW 1-17n-9w, Hospah pool, was completed in the lower Mancos at 1,560 ft. for 72 bbl., initially.

San Juan County

Claude Carroll 1 Cornell, SW NE 11-29n-12w, Fulcher basin, was completed at 1,989 ft. for 1,200,000 cu. ft. of gas a day. He will drill two more wells this fall.
Southern Union Prod. 1 Govt. NW SW SE 13-29n-12w
Drilling in at 1,740 ft. in Picture Cliff.

Deep West Virginia Gas Test Tops Onondaga Lime

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Sept. 30.—In Harrison County, West Virginia, the important test of the Hope Natural Gas Co. on the C. S. Gribble farm in Grant district topped the Corniferous lime (Huntersville chert) at 7,065 ft. and is drilling at 7,125 ft. The surface elevation is 1,113 ft. On the Weston quadrangle, this test is located 0.57 mile south Lat. 39° 10′ and 4.3 miles west Long. 80° 15′ and on the west flank of Chestnut Ridge 1 mile east of Lost Creek. The test is being drilled with a rotary which, starting about July 1, has made excellent time. In the present formation, cherty lime, progress is slow as during the past 24 hours only 15 ft. were drilled.

During the past week in the lower eastern fields, 35 completions were reported of which 4 were dry, 28 gas wells, and 3 oil producers with a daily initial of 95 bbls.

SOUTHWEST PENNSYLVANIA

On Chestnut Ridge in South Union Township, Fayette County, Pennsylvania, Peoples Natural Gas Co. reached the Tully lime and is 22 ft. in it in the 2 Piedmont Coal Co. and drilling at 5,742 ft. This company is ready to run 10-in. casing in No. 3 to 1,367 ft. Here New Penn Development Co. and William Snee are building the rig to deepen 1 Summit Hotel (Heyn). In North Union Township, Wasson et al are drilling 2 J. H. Sorg at 4,557 ft.

On Laurel Ridge in Stewart Township, Fayette County, New Penn Development Co., William Snee, and E. G. Mueller are still shut down at 8,002 ft. in the test on the Gregg L. Neel farm. Drilling will be resumed this week. In Maryland these operators' test on the Humberson farm on the Accident dome in Garrett County is now drilling in the new hole at 6,430 ft. South of this at Deep Creek Lake, George L. Yaste has been shut down at 1,750 ft. in the test on the J. A. Bloch estate, but will resume drilling this week. Due to the size of the hole, 13-in., the drilling machine is proving inadequate.

Allegheny County

West Deer Township: Sipe Bros. 1 Matthew Sterling heirs, 1 bbl., Third sand 1,833 ft., T.D. 1,868 ft.

Armstrong County

Cowanshannock Township: Equitable 1 Earhart heirs, 78,000 cu. ft. gas, Bradford sand, T.D. 3,635 ft.
Kiskiminitas Township: Broman & Dorcey 5 M. M. Marten, 44,000 cu. ft. gas, Bradford sand, T.D. 3,400 ft.
Kittanning Township: Equitable 1 Joseph Shuster, 73,000 cu. ft. gas, Bradford sand, T.D. 3,535 ft.
Mahoning Township: John Wray et al 2 King Shaffer, 200,000 cu. ft. gas, Murraysville sand, T.D. 1,545 ft.
South Bend Township: Equitable 1 Margaret Claypool, 492,000 cu. ft. gas, Bradford sand, T.D. 3,300 ft.

Clarion County

Porter Township: T. W. Phillips 1 Brown School Lot, 50,000 cu. ft. gas, Sheffield sand, T.D. 2,831 ft.

Fayette County

Nicholson Township: Duquesne 1 Ivan Mallery, 70,000 cu. ft. gas, Fifth sand 2,354 ft., gas 2,356-66 ft., T.D. 2,450 ft.

Greene County

Morris Township: Romney Rutan et al 1 Alfred Rutan, 3 bbl. and 300,000 cu. ft. gas, Nineveh Thirty-foot sand, 3,223 ft., gas and oil 3,261-65 ft., T.D. 3,265 ft.

Indiana County

Brush Valley Township: T. W. Phillips 1 Elizabeth Bennett, dry, Bradford sand, 3,527 ft.
White Township: T. W. Phillips 1 Ober & Altimus, dry, Bradford sand, 3,487 ft.

WEST VIRGINIA

Activity still continues at a high rate in the Oriskany fields in West Virginia with several rigs standing and 25 wells drilling in Kanawha County and 15 drilling in Jackson County and additional rigs building. Outside of that area in Ravenswood district, Jackson County, Columbian Carbon Co. is drilling at 1,280 ft. in the test on the P. F. Riggs farm and Guy Boggess cemented back and is drilling at 1,630 ft. in the test on the H. L. Tallman farm. In Wood County Glen Roberts et al are still shut down with the casing cemented in the Corniferous in the test on the C. W. Cook farm in the Parkersburg syncline in Tygart district.

Boone County

Scott district: Hope 8507 F. B. Nelson, 250,000 cu. ft. gas, Maxton sand 1,385-1,440 ft., Big lime 1,600-1,800 ft., gas 1,750-56 ft., Big Injun 1,810-45 ft., Berea 2,304-33 ft., gas 2,308-14 ft., T.D. 2,353 ft.

Cabell County

Barboursville district: Barboursville Fuel 1 Harry Hatfield, 175,000 cu. ft. gas, Big lime 1,440-1,595 ft., Big Injun 1,615-1,750 ft., Berea 2,243-50 ft., Brown shale 3,070-3,319 ft.

Calhoun County

Center district: Hope 8513 Allen Hardman, 500,000 cu. ft. gas, Big lime 1,623-1,720 ft., Big Injun 1,720-79 ft., gas 1,768-75 ft., T.D. 1,815 ft.
Sherman district: Hope 8504 E. W. Gainer, 100,000 cu. ft. gas, Big lime 2,042-2,130 ft., Big Injun 2,130-97 ft., gas 2,090-97 ft., T.D. 2,249 ft.
McCall Drilling Co. 1 D. W. Wilson, 400,000 cu. ft. gas, Big Injun 2,010-60 ft., gas 2,010-48 ft., T.D. 2,501 ft.

Clay County

Otter district: Pittsburgh & W. Va. 7761 Ed L. Boggs, 926,000 cu. ft. gas, Rosedale salt 1,454-1,742 ft., Blue Monday 1,805-37 ft., gas 1,813-32 ft., Big lime 1,837 ft., T.D. 1,839 ft.

Gilmer County

Glenville district: Pittsburgh & W. Va., 7726 J. H. Powell, 200,000 cu. ft. gas, Big Injun 1,918-2,027 ft., gas 2,020-67 ft., T.D. 2,073 ft.
Pittsburgh & W. Va. 7746 E. D. Fulton, 300,000 cu. ft. gas, Salt sand 1,059-1,150 ft., gas 1,075-83 ft.
DeKalb district: Hope 8509 Louis Bennett, 245,000 cu. ft. gas; Big lime 1,680-1,760 ft., Big Injun 1,760-1,830 ft., gas 1,792-1,824 ft., without shot, T.D. 1,854 ft.
Hope 8510 C. W. Goff, 100,000 cu. ft. gas, Injun sand, T.D. 1,839 ft.

Kanawha County

Union district: Godfrey L. Cabot 2 L. M. Lafollette, 1,443,000 cu. ft. gas, Injun sand, T.D. 1,638 ft.

Lincoln County

Jefferson district: Kanawha G. & U. 1 E. Golden Stone, drilled deeper, start 2,283 ft., dark slate 2,810-2,940 ft., White shale 2,940-3,350 ft., Brown shale 3,360-3,480 ft., Brown shale 3,530-3,640 ft., T.D. 3,646 ft., 134,000 cu. ft. gas 24 hr. after shot.
Stinson 2 Milton Egnor heirs, drilled deeper, start 2,220 ft., Berea 2,204-29 ft., Brown shale 2,860-2,920 ft., 3,295-3,615 ft., 50,000 cu. ft. gas 24 hr. after shot.

Logan County

Logan district: Boone County Coal Co. 18 fee, 302,636 cu. ft. gas, Big lime 2,374-2,510 ft., Big Injun 2,510-80 ft., Berea 3,032-51 ft., T.D. 3,100 ft.

Ritchie County

Grant district: R. C. Jackson et al 1 Emery H. McGinnis, dry, Squaw sand, T.D. 2,010 ft.
Murphy district: Reno 5 John Coyle heirs, 180,000 cu. ft. gas, Squaw, T.D. 1,835 ft.
J. F. Deem 1 Lemuel Wilson, 130,000 cu. ft. gas, Injun, T.D. 1,785 ft.

Wayne County

Stonewall district: Owens, Libby-Owens 22 Hoard Baldwin, 116,000 cu. ft. gas, Big Injun, T.D. 1,767 ft.
Union district: United Carbon 1 A. G. Toney, 380,000 cu. ft. gas, Big lime 1,184-1,300 ft., Big Injun 1,330-1,440 ft., Berea 1,945-60 ft., Brown shale 2,520-2,885 ft., Brown shale 3,075-3,127 ft., Corniferous lime 3,127 ft., T.D. 3,127 ft.
United Fuel Gas 4,885 A. P. Booth, dry, Big lime 1,208-1,407 ft., Big Injun 1,407-64 ft., Berea 2,024-46 ft., Brown shale 2,148-3,140 ft., show gas 3,034-42 ft.

ORISKANY GAS FIELD

Kanawha County

Poca district: Columbian Carbon 1 George W. Spencer et al, 3,766,000 cu. ft. gas, Corniferous lime 4,732-4,839 ft., Oriskany 4,830, gas 4,834-49 ft., T.D. 4,921 ft.
Linden Drilling Co. 2 J. W. Harding, 119,000 cu. ft. gas, Oriskany 4,912 ft., T.D. 4,981 ft.

DRILLING REPORT

Poca district: United Carbon 1 Robert Wines, 8⅝-in. casing to 1,780 ft.
United Carbon 1 William Wines, 8⅝-in. casing to 1,811 ft.
Columbian Carbon 1 Fay E. Hughart, top Corniferous 4,906 ft.
Godfrey L. Cabot 2 Poca Coal & Land Co., Corniferous 4,930 ft., Oriskany 5,036 ft., first gas 5,037 ft., 283,000 cu. ft. gas.

Jackson County

Ripley district: Godfrey L. Cabot 9 Putnam Co., 8,000,000 cu. ft. gas, Corniferous lime 5,096-5,205 ft., Oriskany 5,205-51 ft., gas 5,205-09 ft., gas 5,215-16 ft., gas 5,236-37 ft., T.D. 5,251 ft.
Washington district: Columbian Carbon 3 Helen M. Hoge, 19,000,000 cu. ft. gas, Corniferous lime 5,175-5,283 ft., Oriskany 5,283-5,302 ft., gas 5,287-5,302 ft., T.D. 5,302 ft.

Texas Gulf Coast

(Continued from Page 60)

TEXAS GULF COAST DRILLING REPORT

Austin County

Humble 7-B Hardy, deep test, N flank Raccoon Bend field, T.D. 7,465 ft., drill pipe stuck.
Humble 17-C Woodley, deep test, Raccoon Bend field, drilling shale 8,566 ft.

Brazoria County

Gulfboard Oil Corp. 1 Milburn, 2 mi. NW of Alta Loma field, drilling shale 6,547 ft.
Rowan & Nichols 1 Bradbury, E outpost test, Rowan field, top small Discorbis 6,347 ft., Heterostegina 7,180 ft., drilling shale 7,901 ft.
Stanolind 1 Hodnett, SE of discovery well, Rowan field, drilling shale 5,814 ft.

Chambers County

Humble 2-A-246 State, Galveston Bay, drilling sandy shale 9,700 ft.
Humble 1-B-288 State, Galveston Bay, drilling shale 9,212 ft.
Humble 2-C-45 State, Galveston Bay, drilling shale and sand 8,796 ft.

Colorado County

W. R. Davis 1 Brownson, 2½ mi. SW of Garwood, drilling shale 5,750 ft.

Galveston County

Continental 1 W. S. Davis, 3 mi. NE of League City, drilling shale 9,428 ft.

Jefferson County

British American Producing Co. 1-72 State-Gulf of Mexico, T.D. 7,600 ft., drill pipe stuck, trying to wash over.

Liberty County

Gulf 1 Phoenix Development Co., deep test, SE flank Hull field, 9⅝-in. protection casing 7,682 ft., drilling ahead.

Matagorda County

Ohio 1 Blackburn, Sugar Valley prospect, 10¾-in. casing cemented 2,097 ft., drilling plug.

La.-Ark. Fields

(Continued from Page 59)

Love, Owens & Carter 1 Montana Realty ..... N½ SW SW 10-17-28
Set 10¾-in. casing 150, T.D. 155 ft., drilling ahead.

Prairie County

Hazen Oil 1 Fidelity Mutual ..... NE NE SW 16-2n-6w
T.D. 125 ft., S.D., waiting on casing.

Saline County

Tedford Drlg. Co. 1 Williams 31-3s-15w
Drilling sandy shale 477 ft.

EAST TEXAS BORDER

Joaqu'n to Be Developed

Transfer of 3,300 acres from Redditt and Gray to Southern Production Co. and a farmout agreement for gas rights from Pure Oil Co. involving 2,700 acres has made the Southern company one of the largest holders in the Joaquin gas-condensate field of Shelby County. Further negotiations between the company and Ohio Oil Co. are reported. It is believed that as a result of the farmout from Pure, Southern will drill 14 wells. The company, a subsidiary of Southern Natural Gas Co. of Birmingham, Ala., is developing added gas reserves to supplement declining production in the Monroe field, and a gas pipe line is planned from Joaquin to Monroe after production has been sufficiently developed in the former area.

An eastern outpost to Joaquin, Union Producing Co. 1-B Garrett in De Soto Parish, Louisiana, is still drilling below 5,770 ft., having missed the gas zone in the porous lower Glen Rose lime.

EAST TEXAS BORDER COMPLETIONS

Waskom—Harrison County

Arkansas Louisiana Gas Co. 2 W. B. Taylor, E. Little Sur., 8,500,000 cu. ft. gas, Rodessa section, lower Glen Rose, T.D. 6,183 ft.

EAST TEXAS BORDER DRILLING REPORT

Bowie County

Chas. Daniels et al (former W. E. Neill) 1 Lewis Fort, L. Peters Sur., T.D. 2,320 ft., prepare set casing 2,280 ft., S.O.

Cass County

Max Agress 1 Clark & Boise Lumber Co., Lot 2, B. Hawkins Sur., S.D. 1,760 ft.
Henry A. King 1 Heilborn & Kay, D.&S.E.R.R. Sur., T.D. 4,202 ft., running electrical log.

Panola County

Holcombe & Thomason 15 Crenshaw, Thos. W. Cox Sur., drilling 2,723 ft.

Sabine County

Sterm & Womack 1 Kieth, L. Grace Sur., S.D. 6,173 ft.

Shelby County

P. & B. Oil Co. 2 W. C. Windham, A. K. English Sur., P.B. 3,360 ft., pumping 80 bbl. fluid, 10 per cent oil, old T.D. 3,362 ft.
Paul Pewitt 1 J. S. Swann, set 5-in. casing, no seat or total depth released.
Superior Oil 5 Pickering, D. Gonzales Sur., spudding.

MISSISSIPPI AND SOUTHEAST

Lower Tuscaloosa Shows Salt Water at Tinsley

By GEORGE WEBER

JACKSON, Miss., Sept. 30.—The recent show of oil in a deep Tuscaloosa sand below the productive Powell sand showed salt water on a drill-stem test last week temporarily spiking interest in that formation. The test, Edgar C. Johnston, 6-B Brumfied, 2-10-3, a northwest-edge test in Tinsley, topped the Tuscaloosa formation at 5,702 ft. and the Powell sand, now producing in Union's 1 Powell, was cored at 5,928-50 ft. showing salt water and no oil. The test was carried deeper and cored a sand with a show of oil at 6,357-66 ft., 407 ft. below the base of the Powell sand. A string of 5½-in. casing was set at 6,423 ft., with bottom of the hole at 6,430 ft., perforated at 6,364-67 ft. A drill-stem test showed recovery of 540 ft. of mud and 5,520 ft. of salt water in 38 minutes, using ⅝-in. chokes top and bottom, with packer set at 6,340 ft. Operators do not plan to retest the section, but according to reports will plug back to perforate Eutaw sections showing oil. The Perry sand in the Eutaw was topped at 5,034 ft., and the Woodruff sand in the Selma chalk formation was topped at 4,603 ft. Much interest was evinced in the test when it showed Tuscaloosa oil in the sand core, and the mere presence of the show, despite the failure of the test will incite further tests to be drilled into the Tuscaloosa formation at Tinsley and elsewhere in the state.

Good Woodruff Sections Cored

At Tinsley the Union Producing Co. continued to core thick sections of Woodruff sand. The 1-A Adcock, SE NE 24-10-3, a southeast-edge test encountered oil-saturated sand from 4,895-4,965 ft., showing at least 70 ft. of sand, and probably more, since the first core taken at 4,885 ft. showed no recovery and the next core showed oil sand. Casing has been set to 5,041 ft. and early completion is expected.

Another southeast extension to the field is indicated from the results of the Union 2 Robinette, which is reported to have cored an overall section of 98 ft. of Woodruff oil sand from 4,785-4,883 ft. Casing is also being run in this test for completion. The success in the southeast section of Tinsley is drawing interest away from the north end where most recent developments have taken place. The main fault which extends in a general northwest-southeast direction through the field is anticipated a short distance east of the Robinette test, for Whigate Oil Co. 1 Robertson, NW NW 20-10-2, ½ mile due east of the Union Robinette, encountered the Woodruff sand much lower than the Robinette, and was abandoned after it tested salt water. The area to the south and southeast of the field, defined by the fault, however, shows excellent production possibilities from the indications of Woodruff sand thickness on the field's present edges, and development may be expected to continue. Union Producing Co. holds nearly all acreage near the field in those directions, however, so development will probably be gradual, one offset location at a time.

Developments of the past week showing continuation of the outward thickening of the Woodruff sand are causing upward revision of Tinsley's reserve estimates, and the field is strengthening its position as a major oil reserve, with ultimate recoverable oil now conservatively estimated at 30,000,000 bbl. The field production again dropped last week, to an average daily rate of 20,968 bbl. This is due to filling of storage on the part of one operator, and to curtailed runs by two other producers. The reported agreement among producers to limit production still further has not yet taken effect, and most of the oil now produced is still going to storage. Results of the heavy withdrawals during the past 2 months was further reflected last week by the fact that 78 per cent of the wells are now on the pump, compared with about 50 per cent 2 months ago.

Wildcat Activity

Leasing and blocking continued most active in the southern sections of Mississippi and Alabama, with the play following the trend eastward into Alabama and Florida.

Two new wildcats were reported for Grenada County and a new Georgia wildcat is planned in Truelten County. Another Yazoo County wildcat is believed due soon northeast of Tinsley in 10-11n-2w, and a tentative location of a south Carroll County wildcat is expected to be announced soon.

The Exchange Oil Co. 5 Wilburn, was abandoned after upper Eutaw sections showed nothing at 4,830-40 ft. and 4,870-76 ft. Attala and Newton County wildcats were also abandoned after drilling into the Tuscaloosa formation. In Lawrence County, Alabama, a wildcat showed a slight gas show in the Trenton lime but no oil.

MISSISSIPPI COMPLETIONS

Wildcat—Attala County

Hawkins, Howell & Mathews 1 Weeks, NW SW 29-15-6e, T.D. 5,022 ft., dry, tops Midway 1,624 ft., Selma chalk 2,303 ft., Eutaw 2,339 ft., Tuscaloosa by samples 3,905 ft.

Wildcat—Newton County

Kingwood 1 State Land, NE NE SE 27-8n-10e, T.D. 4,781 ft., dry, sample tops Wilcox 485 ft., Midway 2,170 ft., Selma chalk 2 585 ft., Eutaw 3,595 ft., Tuscaloosa 3,910 ft.

Wildcat—Yazoo County

Exchange and Kingwood 5 Wilburn, NW NW 31-12n-3e, T.D. 6,043 ft. drv, tops Selma chalk 3,877 ft., Eutaw 3,811 ft.

MISSISSIPPI DRILLING REPORTS

Attala County

Jones & Crosby 1 J. F. Allen, SW SW 33-13n-5e, T.D. 4,500 ft. in Tuscaloosa, no shows, running electrical log.
Jackson & Spearman 1 Crosby, NW NE 3-14n-7e, drilling 4,190 ft.

Grenada County

Womble & Williams 1 Conn. General Life Ins. Co., NE NW SE 28-23n-5e. drilling 980 ft.

Jones County

T. N. Smith 1 Hollifield, NW SW NW 20-8n-12w, drilling 6,020 ft.

Lamar County

Tatum Lumber Co. 1 W. S. F. Tatum, NE 14-2n-16w, rigging up.

Lee County

R. L. Shoemaker 1 Martin SW SW NE 33-9s-6e, drilling 707 ft.

Marshall County

C. B. Blosser 1 S. Stansback, SE SE 19-3s-4w, rigging up.

Montgomery County

E. R. Henderson 1 Columbian Mutual Life Ins. Co., 36-21n-5e, S.D. 3,332 ft. (cor.).

Sharkey County

British American 1 F. B. Houston estate, N½ NE SW 23-11n-7w, rigging up.

Simpson County

Goodwill Oil & Gas Co. 1 Berry, 33-2n-4e, last reported drilling 2,816 ft., no report.

Tishomingo County

Mellen & Gear 1 E. K. Wood, SE SE SE 21-4s-11e, spudded.

Warren County

W. O. Allen 1 Tom Henry, W½ SW 4-7n-4w, rigging up.

Yazoo County

Edward DeLoach 1 Wilburn, 6-12n-3w, drill stem stuck 3.839 ft., lubricating.
Exchange 1 A. E. Edgar, SW NW NW 28-13n-1w, casing 5,687 ft., no shows.

MISSISSIPPI FIRST REPORTS

Wildcats—Grenada County

H. T. Salter et al 1 Carpenter, 6-21n-7e.
James Papadakis 1 Holcomb, 13-22n-2e.

ALABAMA COMPLETIONS

Wildcat—Lawrence County

D. V. Mann et al 1 W. R. Jackson, NE NE 30-7s-6w, T.D. 2,001 ft., dry, drilled through Trenton, very slight show gas, no show of oil.

ALABAMA DRILLING REPORTS

Colbert County

Mellen & Gear 1 Alsobrook, S½ SW NW 10-4s-15w, T.D. 1,048 ft., S.D., gas show in Trenton lime.

Fayette County

B. L. Fillingame et al 1 T. Harbin (former Ala. Educational Ass'n.), NW SW 3-16s-12w, S.D. 960 ft. (cor.).

Franklin County

E. O. Heath, Jr. 1 W. O. Hester, SW SW 4-6s-12w, set 12-in. casing 80 ft., S.D. 85 ft.

Madison County

J. L. Caldwell et al 1 J. McCord, SE SE 30-1s-2e, S.D. 105 ft.
W. W. Newman 2 W. P. Nichols, NE NW NE 2-6s-2e, drilling 90 ft.

Marion County

Seaboard 1 Clarke et al, SE SE SW 28-11s-14w, last reported drilling 2,579 ft., no report, reported minor show oil or gas.

Mobile County

Lilly & Temple 1 J. R. Lockhart, SE NW SW 24-7s-3w, S.D. 6,707 ft.

Morgan County

F. W. Rohwer 1-B K. Hough, 2-6s-1w, set 8-in. casing 132 ft.

Walker County

Champlin 1 Galloway Coal Co., 12-13s-10w, set casing 2,245 ft., fishing.

GEORGIA FIRST REPORTS

Wildcat—Truetlen County

Glenn D. Rose and H. L. Ray 1 James Fowler, 6 mi. NE Soperton, moving in material.

Statement of the Ownership, Management, Etc., of

THE OIL AND GAS JOURNAL

October 1, 1940

(This statement is published in compliance with the Act of August 24, 1912.)
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Managing Editor: L. M. Nichols, Tulsa, Okla.
Business Manager: S. H. Rourke, Tulsa, Okla.
Stockholders holding 1 per cent or more of total amount of stock: Helen B. Lauinger, Tulsa, Okla.; P. C. Lauinger, Tulsa, Okla.; Estate of Edward R. Boyle, Oil City, Pa.; Edward P. Boyle, Oil City, Pa.
Known bondholders, mortgagees and other security holders holding 1 per cent or more of the total amount of bonds, mortgages or other securities: None.

S. H. ROURKE,
Business Manager.

Sworn to and subscribed before me this 13th day of September, 1940.

H. R. BARNETT.
Notary Public.

My commission expires October 3, 1941.

NEXT STOP ST. LOUIS!

AND MY STOP IS HOTEL Mayfair!

TOPS IN FOOD & SERVICE - AND RIGHT DOWNTOWN

ALL ROOMS WITH BATH . . . RADIO RECEPTION

LEGAL

Department of the Interior, United States Land Office, Las Cruces, New Mexico. Notice is hereby given that a lease of the oil and gas deposits in the following described lands is offered to the responsible qualified bidder of the highest bonus per acre, pursuant to the provisions of section 17 of the act of February 25, 1920 (41 Stat. 437), as amended, at the royalty rate scale in the lease form shown in General Land Office Circular 1386, at a sale to be held in the office of the Register of the District Land Office at Las Cruces, New Mexico, at 10 a.m. on October 14, 1940: E½ SE¼ Sec. 15, T. 17 S., R. 32 E., N.M. P.M., New Mexico, containing 80 acres, in the Baish oil and gas field. The successful bidder must deposit on the date of the sale a certified check on a solvent bank, or cash, for one-fifth of the amount of each bid, and file a showing of qualifications to receive the lease, required by section 7 of Circular 1386. The remaining four-fifths, together with the annual rental in advance at the rate of $1 per acre, must be paid and a $5,000 corporate surety bond must be furnished prior to the issuance of the lease. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

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Personal Paragraphs

VERL L. ELLIOTT, controller, the Atlantic Refining Co., was elected last week as president of the Controllers Institute of America at the institute's annual meeting in New York City. He was one of five vice presidents of the institute last year.

C. H. KEEN, district superintendent for the Humble Oil & Refining Co., is now stationed at the Lovells Lake district in Jefferson County, Texas. He succeeds J. E. WHEATLEY, who is transferred to the Galveston Bay district.

E. L. FIPPS, who has represented Plymouth Oil Co. in Mississippi, is being transferred to Sinton in Southwest Texas.

JOHN R. EVANS, chief petroleum engineer for the Stanolind Oil & Gas Co. with offices in Tulsa, has been chosen president of the Technical Club of Oklahoma.

ROSS BREWER, manager for Texas Consolidated Oil Co. in West Texas and New Mexico, has moved his residence and offices from Midland to San Angelo, Tex.

W. W. KELLEY, geologist of San Antonio, Tex., delivered a technical paper on "Limitation of Geophysical Methods" before the South Texas Geological Society at San Antonio the past week.

GEORGE BUCHANAN, Houston, Tex., geologist for the Texas Gulf Production Co., is in the Rocky Mountain area on company business and stopped in Denver to confer with local interests.

LARRY HULTS, independent operator of Fort Worth, Tex., and TOM B. OWENS, also of Fort Worth and partner of Mr. Hults, were honored at a barbecue held in Bowie, Tex., last week to celebrate the opening of a new field at the operators' recent discovery well just outside of Bowie. Others introduced at the outing were C. W. HANLEY, zone agent for Gulf Oil Corp., and COL. W. T. KNIGHT, independent operator of Wichita Falls.

F. A. C. GUEPIN, vice president, and JOHN P. VISSER, among Shell executives transferred from St. Louis to New York, have taken apartments at 1000 Park Avenue and 60 East Sixty-ninth Street, respectively.

HAROLD C. BISHOP, of New York City, has returned to his home in the East after an extended trip through the Southwest. Mr. Bishop has developed a producing property in Starr County, Texas, and is now devoting much time to preliminary exploration on the Bell ranch in Miguel County, northeastern New Mexico.

J. R. PEMBERTON, for several years California oil umpire, has opened offices in the Petroleum Building in Los Angeles as a petroleum geologist and engineer specializing in tax matters.

A. L. RICHARDSON, of General Petroleum Corp., and L. GLEN SMITH, of Wilshire Oil Co., were the principal speakers at the last monthly meeting of the Petroleum Accountants Society in Los Angeles, Calif., of which W. A. RUSSELL, of Seaboard Oil Co., is president.

R. A. WOTOWICH, former Cities Service Oil Co. and Warner-Quinlan Co. executive, has joined the Weaver Shipping & Oil Corp. as vice president in charge of sales. Mr. Wotowich was named an honorary trustee at the National Petroleum Association meeting in Atlantic City September 19.

HARRY MARTIN, production foreman of Union Oil Co., had a narrow escape recently when a derrick on the Lake View lease at Maricopa, Calif., fell on him. He was protected from injury by a relatively shallow trench into which he fell. It was in this same area and in much the same manner that one of the Havenstrite boys was killed a few years ago. R. E. HAVENSTRITE, a survivor, recently discovered a new field in the Newhall district of Los Angeles Basin.

C. W. DAY, land man with British American Oil Producing Co., has been transferred to Jackson, Miss.

MARTIN MUENCH, in the land department of Texas Co. and formerly stationed in Fort Worth, Tex., has been transferred to Midland, Tex.

A. M. CROWELL, director of the Arkansas Oil and Gas Commission, is in Washington, D. C., for a stay of 30 to 60 days, at the offices of the Arkansas Industrial Commission.

LEE CORNELIUS, scout for Gulf Oil Corp. at Midland, Tex., has been elected second vice president of the West Texas Scouts Association and chairman of its land check, succeeding PAT RILEY of Standard Oil Co. of Texas, Midland.

OLIN CULBERTSON, Democratic nominee for the Texas Railroad Commission, will be the main speaker at the quarterly session of the officers and directors of the West Central Oil and Gas Association at Stamford, Tex., October 3.

J. D. DAVIS has been appointed district manager of United Gas Pipe Line Co. at Jackson, Miss. Mr. Davis succeeds the late J. P. Rogers, and was promoted from his former position as pipe-line superintendent at Jackson, which he held for 8 years.

A. T. (CAPT) McDANNALD, drilling contractor and producer of Houston, Tex., headed a group of prominent Houston oil and business men who left last Friday for a week's hunting trip on Mr. McDannald's large ranch in New Mexico. The party left Houston in the new T.W.A. Stratoliner airplane for Albuquerque.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

A tank car containing 250 bbl. of gasoline exploded at Ardmore, Okla., killing 47 persons and causing property damages of $500,000. The car had been shipped to the Ardmore Refining Co. and was standing on the tracks near the depot. Cause of the explosion was not determined.

A syndicate of Baltimore, Philadelphia, New York and Chicago banking interests, headed by the Equitable Trust Co., Baltimore, has underwritten an issue of $1,000,000 5-year 6 per cent convertible bonds of the oil firm of Cosden & Co., Tulsa.

20 YEARS AGO

Midwest Refining Co. and Elk Basin Consolidated will jointly own and operate the pipe line now being built into Cat Creek field in Montana. The Cat Creek field is regarded as the big oil discovery of the year.

Joseph A. Phelan, of the United States Shipping Board, who has just finished a tour of the Mexican oil fields, predicts that production of the Gulf coastal fields in that country this year will be 140,000,000 bbl. He said the future possibilities of the Mexican fields are almost beyond conjecture, with fabulous potential figures.

10 YEARS AGO

Conservation and proration is being criticised and attacked in many areas, with the Texas Panhandle currently a center of agitation. Danciger Oil & Refining Co. has obtained an injunction against proration in the Panhandle, allowing it to produce all its wells to capacity.

A majority of the major companies are assuming a hands-off policy in regard to the immediate area surrounding the C. M. Joiner wildcat in Rusk County, East Texas, until it is tested. There has been some checkerboard leasing in Rusk and adjoining counties.

A 500,000-cu. ft. gas well, producing from pay at 360 ft., was completed just off a principal business street in Kansas City, Kans.

FREDERIC MELLEN, consulting geologist, has moved his offices from West Point to Iuka, Miss.

E. B. LYMAN, editor of The Lamp, Standard Oil Co. of New Jersey organ, is directing an alumni drive for $1,500,000 for Fordham University.

ROY RATHER, JR., gas engineer for Pure Oil Co., has been temporarily transferred from Bird Island to the company's office at Houston, Tex., in the production-engineering department.

JOHN M. STARK, JR., land man with Southern Production Co., division of Southern Natural Gas Co., Birmingham, Ala., has been placed in charge of the newly opened Shreveport, La., office.

ROBERT A. HORNBY, vice president of Pacific Lighting Corp., was elected president of the Pacific Coast Gas Association at the forty-seventh annual convention of that association which was held in Coronado, Calif. Mr. Hornby succeeds A. E. HOLLOWAY, of San Diego.

T. F. PALMER, formerly in the land department of Sinclair Prairie Oil Co. at Corpus Christi, Tex., has been made chief clerk of the Texas division of the Sinclair Prairie Oil Marketing Co. and moved to the Fort Worth offices of the company. He succeeds T. W. EVERETT, moved to Corpus Christi in the land department.

AUSTIN ALLEN, JR., has been promoted to chief production engineer for Phillips Petroleum Co. with offices in Bartlesville, Okla. He was formerly assistant division superintendent in West Texas, Texas Panhandle and New Mexico with headquarters in Amarillo, Tex. Mr. Austin succeeds O. L. CARSON who resigned the post of chief production engineer.

Made Decision Early

It did not take O. D. Crites, manager of the crude-oil department of Shell Oil Co., Inc., Houston, Tex., long to make up his mind to seek a career in the oil business. He was born in an area which hummed with oil excitement during the boom days of Burkburnett, and witnessed the discovery of oil on his family's land in Wichita County, Texas.

O. D. CRITES

After graduating from Kemper Military College, at Boonville, Mo., he started to work with the Texhoma Refinery at Wichita Falls, Tex., in 1919, and a year later joined the Gulf Production Co. (Gulf Oil Corp.) at Wichita Falls and Fort Worth, where he worked under W. B. Pyron and J. Alvin Gardner. In 1926 he resigned, and joined the title department of the old Roxana Petroleum Corp., at Dallas, Texas, which later became the Shell Oil Corp. Within a few months he was transferred to the land department, and his work took him to all parts of Texas and New Mexico. He was later transferred to the crude-oil department, and in 1931 was appointed assistant manager of the department. He was promoted to his present position in 1936, and in this capacity he handles all crude-oil purchases, sales and transportation of crude oil for the company in the Texas Gulf Coast district.

Mr. Crites was born in Iowa Park, Tex., in 1889, is married and has two children. He is an honorary colonel on the staff of Gov. John E. Miles, of New Mexico, and is an active member of the Mid-Continent Oil and Gas Association. When he is not engaged in traveling, Mr. Crites likes to relax with a good game of bowling, or an occasional hunting trip.

JOE SLAGEL, drilling contractor, is moving his offices and operations from Hartford, Mich., into Kentucky.

RAY HUNT, who recently resigned as geologist for the Michigan Devonian Corp., has opened offices in Grand Rapids, Mich., as a consulting geologist.

BERT LIGON, independent operator of Wichita Falls, Tex., is recovering in a Wichita Falls hospital from an automobile accident suffered last week near that city.

SAM HULSE, sales manager of Warren Petroleum Corp., Tulsa, is in the East on vacation, during which he will attend the World's Series baseball games in Cincinnati, Ohio.

N. G. MOORE, formerly field superintendent for the Empire Pipe Line Co. in the East Texas field, has joined the Pan American Pipe Line Co. as general superintendent with headquarters at Houston, Tex.

NEIL BREEN, vice president of the Sylvester Oil Co., New York City, last week won the fuel-oil-trade golf championship, duplicating his victory early in September in the New York Oil Trades Association tournament.

W. D. GRAY of Houston, Tex.; R. J. WOLFE of Tyler, Tex., and JOHN A. CHAPMAN, Tulsa, who has resigned from Frick-Reid Supply Corp. as of October 1, have formed a new drilling company with headquarters in Houston.

CHARLES P. McGAHA, independent oil man, has been appointed chairman of the oil division in the Wichita Falls (Tex.) Community Chest campaign. Mr. McGaha is a former president of the Texas-Mid-Continent Oil and Gas Association and of the North Texas Oil and Gas Association.

JOSEPH JENSEN, of Tide Water Associated Oil Co., has been elected a director of the Los Angeles Metropolitan Water District. He has served for several years as chairman of the Water and Power Resources Committee of the Los Angeles Chamber of Commerce.

Shifts: G. E. BATES, president, Fortune Petroleum Corp., from Santa Ana, Calif., to Los Angeles, Calif.; CLEO RAY, superintendent, Allen & Morris, from Refugio, Tex., to Corpus Christi, Tex.; J. M. HEWGLEY, vice president, Slick-Urshel Oil Co., from San Antonio, Tex., to Valley, Miss.; R. A. WATSON, geologist, National Geophysical Co., from Alexandria, La., to Winnfield, La.; J. H. GWIN, drilling contractor, Gwin Drilling Co., from Centralia, Ill., to Evansville, Ind.; ERNEST OBERING, geologist, Shell Oil Co., Inc., from Evansville, Ind., to Mount Vernon, Ill.; C. L. WHITEMAN, engineer, the Texas Co., from Newton, Miss., to New Martinsville, W. Va.; GILBERTO DELGADO, engineer, Carter Oil Co., from Fairfax, Okla., to Altamont, Ill.; K. R. NEAL, president, Raymond Oil Co., from Ada, Okla., to Miami, Okla.; J. FRED CAREY, manager, Scott Carey Oil Co., from Wichita, Kans., to Long Beach, Calif.; C. N. VALERIUS, geologist, Barnsdall Oil Co., from Jay, Okla., to Wichita Falls, Tex.; HARRY W. PATTON, geologist, Patton Drilling Co., from Wichita, Kans., to Lawrence, Kans.

CURTIS B. DALL, president of Tennessee Gas & Transmission Co., New York, was in Shreveport, La., recently conferring with gas producers regarding the company's proposed gas pipe line from North Louisiana to Tennessee.

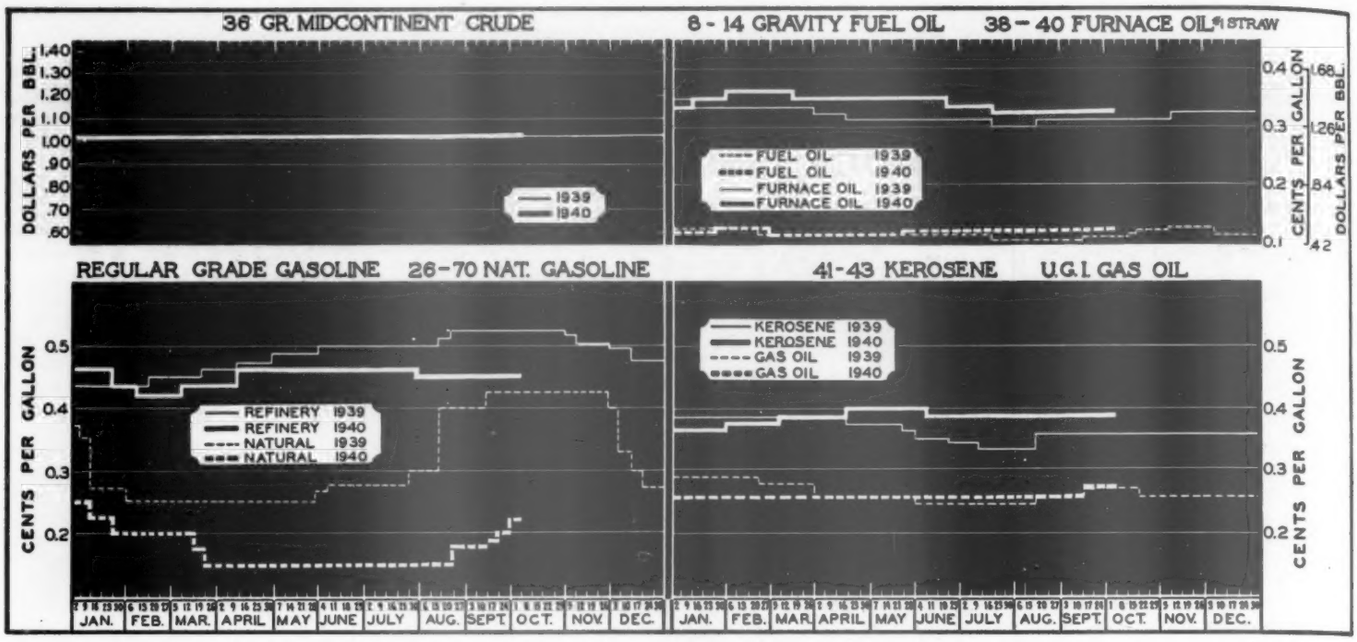
E. V. WINTERS, chief geologist; ARTHUR R. MAY, geologist, and FRANK ITTNER, seismologist, of Superior Oil Co., left their Los Angeles offices recently as members of a geological party that the company has sent to New Zealand.

DAVID HANNAH, of Houston, Tex., has been elected chairman of the executive committee of the Houston Oil Co. of Texas. Mr. Hannah succeeds the late T. S. Maffitt of St. Louis. R. R. HOBSON, general manager of the company, was elected to the board of directors.

JOHN G. HUFFMAN, formerly with the Louisiana Department of Conservation, is now engineer with the Cotton Valley Operators Committee, working on field-system plans for the cooperative pressure-maintenance project.

HAROLD R. PAULEY, vice president of Petrol Corp., has taken over the duties of sales manager since the death of William A. Burns, and is being assisted by OTTO SCHUENKE, manager of the station-leasing department, and RAY BATTEN, credit manager. Messrs. Schuenke and Batten will in addition perform their regular tasks.

M. PARK HUNTINGTON, formerly division engineer for Stanolind Oil & Gas Co. at Casper, Wyo., has been promoted to assistant field superintendent at Salt Creek and will headquarter at Midwest, Wyo. R. B. HAMILTON, former field superintendent at Midwest, has been made district superintendent and will divide his time between field headquarters at Midwest and the Casper office. C. E. JOHNSON, formerly assistant superintendent under Mr. Hamilton, has been promoted to field superintendent in Salt Creek.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Intrastate Mid-Continent Refined Oil Markets Attain Stronger Position

By H. STANLEY NORMAN

ELEVATION of subnormal-gasoline prices within the Mid-Continent district this week imparted a slightly more favorable tone to the internal market. There is no change in the interstate market.

Refiners, if not literally amazed, are at least mildly surprised that the volume of northern movement has extended this late into the fall season. It is pointed out, however, that comparatively mild weather has prevailed in the middle western section of the country, encouraging practically midsummer scale of automobile operation.

Natural Gasoline Stronger

The North Texas natural-gasoline market moved into its normal relationship with Oklahoma this week. Plant operators in the North Texas district were unwilling to quote less than a base price of 2 cents per gallon for 26-lb. natural and the minimum Oklahoma market for this material is 2¼ cents. Most Oklahoma suppliers are asking the top of 2½ cents and there is strong probability that the natural-gasoline market will move forward again in the near future.

The early September distillate fuel-oil buying wave has temporarily subsided for two reasons. In the first place, stock tanks of jobbers and distributors were filled in the first 2 or 3 weeks of the month relieving the necessity for extending purchases until consumer demand takes a more active position. Furthermore, there has been a tendency in recent years to narrow the latitude in deliveries from refineries to contract customers. Many contract customers acquired the maximum September delivery in the first 3 weeks of the month to offset or defeat the trend to higher prices.

To avoid the natural inclination of contract customers to pack all their shipping instructions into the period immediately preceding the burning season and thereby gain advantage of off-season prices, refiners stipulate minimum and maximum quantities for delivery each month.

Many Mid-Continent refiners are still inactive in selling on the distillate fuel-oil market. In fact, those with adequate storage facilities are still buying light burning oils when confronted with favorable opportunities and then holding such stocks against an advance in the open market.

There has been no quotable change in the tank-car market for distillate fuels but refiners feel the trend toward higher prices by the volume and nature of inquiries from consumers. Brokers reported the distillate-fuel market a little less active this week but tone of the business indicates that the seasonal bulge in demand will be in full swing by the middle of the month.

Consumers in the Chicago district and in the more northern cities are buying early winter requirements on an increasing scale fully supporting prospects for a record season.

Residual fuels are also strong, or at least firm, in most markets with exception of the Pacific Coast. Reductions of 5 to 15 cents in the bunker market for heavy fuels were reported on the Pacific Coast with the heavy part of the cuts applied to the high side of quotations.

North Texas Price Raised

Refinery gasoline in the Group 3 market is practically unchanged. There has been a marked improvement in the North Texas intrastate market conditions. Refiners are quoting 4 to 4½ cents per gallon for intrastate business on 60-octane gasoline with addition of ¼ cent for 400-end-point material. Regular gasoline in the North Texas market is quoted at 4⅞ to 5⅝ cents and 63-66 octane is offered at 4¼ to 4¾ cents.

Third-grade gasoline was raised ½ cent per gallon in North Dakota October 1, or to normal if the subnormalcy is less than ½ cent. A reduction of 1½ cents was made by Continental Oil Co. on third-grade motor fuel September 16 at Little Rock, Ark., and regular gasoline was lowered by the same amount at Fort Smith.

Scattered adjustments were made late last month in Standard Oil Co. of Kentucky territory. Prices were raised at Atlanta and Macon, Ga., and Lexington, Ky., while a reduction was made at Covington.

Refined Oil Market Barometer

Distillate fuel oils are gradually gaining the strength generally anticipated for the winter. The usual lull following the first surge in demand for light fuels prevented an immediate increase in quoted prices. There is a definite shortage in spot-market offerings of light fuels indicating that higher bids will be necessary before quantities can be attracted from storage.

MID-CONTINENT. Natural-gasoline prices have made another modest gain. Prices are higher for locally sold refinery gasoline in North Texas.

GULF COAST. Coastwise movement of motor fuel and distillate fuels is following routine lines. Prices remain soft.

CALIFORNIA. Residual fuel-oil prices turned soft probably reflecting the decrease in offshore business.

PENNSYLVANIA. Gasoline moving freely. Neutrals are active and bright stocks are in better position.

CHICAGO. Distillate fuel prices are firm and demand is meeting expectations.

Cool Weather Dissipates Weak Spots in Eastern Fuel Market

By J. P. O'DONNELL

NEW YORK, Oct. 1.—Belated firming of the fuel-oil market in the northeastern area was noted last week as near-freezing weather prevailed in a large part of the territory and the coastwise tanker market gave evidences of strengthening. The price on No. 2 fuel oil remains at 4.1 cents in tank-car lots and 4.0 cents in barges but the softness that was apparent a week ago has disappeared.

Tanker chartering in the Gulf-to-north-of Hatteras market has been on the increase in the past few weeks with the result that quotations for clean boats are reported 2 cents higher and those for dirty boats, 1 cent higher. It was reported that a clean tanker was chartered late last week for coastwise service at rates of 21 cents per barrel for gasoline, 22 cents for kerosene and 23 cents for No. 2 fuel oil, a 2-cent advance over the last reported chartering rates for clean tankers.

Several fixtures were also reported late in the week in dirty tankers at rates of 19 cents for gasoline, 20 cents for kerosene and 21 cents for No. 2 fuel oil. One of the three vessels reported chartered was said to have been taken for three successive voyages. The fact that more dirty tankers are immediately available accounted for the smaller improvement in their rates. The clean-tanker market is reported to be very tight with only a few boats available for early October chartering.

It was also reported that tankers engaged in California-to-Japan trade were being chartered at higher rates. Two weeks ago dirty tonnage in this market was reported available at $10.50 per ton but rates have since risen to $11.50 per ton for dirty and $12.50 per ton for clean vessels. The rate from California to North Atlantic ports was reported maintained at 50 cents per barrel for both clean and dirty boats.

Other marine reports last week included the loading of 60,000 drums of gasoline at a Texas Gulf port for Japan shipment and the chartering of a tanker in the Dutch West Indies-north-of-Hatteras trade. The latter charter was reported closed at 20 cents per barrel and applied to a dirty boat. This was the first charter reported in the West Indies-North Atlantic market for some time and may indicate the opening of normal fall and winter trade in this market.

The firmer tone in the fuel-oil prices on the East Coast is attributed in the main to the improved tanker rates as demand has yet to develop to sufficient proportions to make any inroads on stocks. Aggregate stocks in the East Coast, Texas Gulf and Louisiana Gulf districts which supply the East Coast market totaled 26,502,000 bbl. on September 21, up 402,000 bbl. from the September 14 total. These stocks, exceeding those of September 23, 1939, by 6,867,000 bbl., are apparently proving an effective brake to any possibility of runaway prices.

Kerosene was also reported firmer in the New York Harbor area. Ten days ago it was reported that limited supplies could be obtained at 4.6 cents per gallon but no concessions from the 4.8 cents per gallon price quoted by major suppliers have been reported in the past week. Bunker C fuel oil is also believed to be somewhat more firmly founded with major suppliers quoting $1.25 at refineries and terminals and smaller suppliers continuing their quotation of $1.15 per barrel. Low-priced imports are reported to be the disturbing factor in the Bunker C market and its improvement is said to be contingent on their absorption or removal.

Gasoline continued to recede under the impact of heavy inventories, limited buying and retail-market disturbances. The Socony-Vacuum Oil Co., Inc., announced widespread reductions in the New York and New England territory, in tank-car, tank-wagon and commercial-consumer prices. Tank-car reductions ranged from 0.1 cent in metropolitan New York to 1.1 cents in upstate New York and 1.2 cents in Portland.

Despite a reduction of 500,000 bbl., stocks in the East Coast district remained more than 1,700,000 bbl. above the high level of a year ago. Distributors were reported limiting their buying to immediate requirements in anticipation of further price reductions. In one section of metropolitan New York regular-grade gasoline was reported selling at 8 gal. for $1 in a renewal of the disturbances that brought lower prices a few weeks ago. The retail market in the northeastern area has been unsettled for the greater part of the summer and declining requirements have aggravated the condition in many places.

Refinery and terminal prices on 72-74-octane gasoline in the New York Harbor area were reported lower also last week. Tank-car lots were reported down to 4⅛ cents a gallon, off an eighth of a cent from the previous week's quotation, and there were reports that it could be obtained at 4⅛ cents in some quarters. Continued dullness in the export market accounted in part for the further weakness in gasoline though the principal cause of the eighth-cent reduction in local refinery prices was attributed in a large measure to a similar reduction made earlier at the Gulf.

Wax continues firm in the eastern area due in part to improved demand and in part to restricted supplies. The improvement continues to be restricted to crude-scale grades with both white and yellow scale, 122-4 and 124-6 grades being quoted at 2.50 cents. A month ago these grades were freely available at 1⅞ cents so that the improvement of ⅝ cent in the interim is comparatively substantial though prices remain well below those of last fall. One large wax supplier in the New York market attributed the failure of fully refined grades to improve in sympathy with crude scale to the greater availability of supplies.

The Pennsylvania lubricating-oil market was re-

(Continued on Page 91)

Gulf Coast Markets

HEAVY fuels eased off at the Gulf Coast the past week with suppliers who have been attempting to hold out for 85 cents on Bunker C being forced to back up to 80 cents in their quotations. Although 80 cents has been a going price for some time, various sources boosted quotations to 85 cents during a recent spurt in buying. With reductions the past week the general market again is established at the lower figure, at which all sales reported were made.

The 80-cent price for Bunker C applies both to cargo movement and to ships' bunkers, although normally ships' bunkers command a 5 to 10-cent premium. For some time, however, the balance between the cargo and the bunker market has not followed true to form.

Reductions in quoted prices for heavy fuels reflect the accumulating stocks of these products, with the normal seasonal increase in buying and consumption not yet materializing.

Some buying of No. 2 fuel (gas oil) was reported during the week. This was described, however, as distress material, bringing approximately 3¼ cents. Since the sales, the market, which was beginning to sag in spots, has tightened with the market now considered closer to 3½ cents than the lower figure.

Diesel index oils also reflect a corresponding stiffening. There still is

(Continued on Page 91)

A.P.I. Weekly Refinery Statistics

Week Ended September 28, 1940

	Capacity reporting (per cent)	Total gasoline stocks (bbl.)	Residual fuel-oil stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Daily crude runs (bbl.)
East Coast	100.0	20,804,000	12,812,000	18,156,000	543,000
Appalachian	91.0	3,213,000	587,000	604,000	120,000
Ind., Ill., and Ky.	90.2	13,703,000	3,371,000	5,708,000	627,000
Okla., Kans., and Mo.	76.9	6,074,000	2,246,000	1,661,000	270,000
Inland Texas	59.6	1,495,000	1,519,000	385,000	109,000
Texas Gulf	85.3	10,863,000	7,790,000	7,695,000	834,000
Louisiana Gulf	97.6	2,515,000	1,751,000	1,328,000	120,000
N. Louisiana and Ark.	51.5	483,000	471,000	346,000	48,000
Rocky Mountains	58.0	916,000	469,000	129,000	55,000
California	87.3	15,327,000	75,319,000	10,354,000	514,000
Total reported	85.3	75,393,000	106,335,000	46,366,000	3,240,000
Est. unreported	.....	6,980,000	2,115,000	1,620,000	360,000
*Est. total	.....	82,373,000	108,450,000	47,986,000	3,600,000
*Est. total previous wk.	.....	82,960,000	108,191,000	47,163,000	3,680,000
*Sept. 29, 1939	.....	71,126,000	114,294,000	38,086,000	3,560,000

*Bureau of Mines basis.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended September 21, 1940	262,209,000 barrels
Week ended September 14, 1940	262,475,000 barrels
Week ended September 23, 1939	232,811,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms.

Prices as of October 1, 1940

Taxes

The gasoline quotations given in the following tables include the 1½-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Chicago, Ill.	15.6	13.6	4.5	10.0
Decatur	14.6	13.1	4.5	9.5
Joliet	15.6	14.1	4.5	10.0
Peoria	15.6	13.2	4.5	10.0
Quincy	15.4	13.9	4.5	9.8
Davenport, Ia.	15.6	14.1	4.5	‡10.0
Des Moines	15.4	13.9	4.5	‡9.8
Mason City	15.8	14.3	4.5	‡10.2
Duluth, Minn.	16.4	14.9	4.5	10.8
Mankato	16.0	14.5	4.5	9.0
Minneapolis	16.0	14.2	4.5	10.4
LaCrosse, Wis.	17.0	15.5	5.5	10.4
Green Bay	17.4	15.9	5.5	10.3
Milwaukee	16.8	15.3	5.5	10.2
Detroit, Mich.	14.1	12.6	4.5	7.6
Grand Rapids	13.2	11.2	4.5	9.0
Saginaw	14.9	13.4	4.5	9.1
Evansville, Ind.	16.6	15.1	5.5	†9.8
Indianapolis	16.8	14.8	5.5	†10.0
South Bend	16.8	15.3	5.5	†10.0
Fargo, N. D.	18.2	16.7	5.5	11.6
Huron, S. D.	17.5	16.0	5.5	10.9
Kans. City, Mo.*	14.8	13.3	4.5	8.0
St. Louis*	15.2	13.2	4.5	9.0
St. Joseph	14.9	13.0	4.5	7.9
Wichita, Kans.	13.8	12.3	4.5	7.0

*State tax 2 cents, 1-cent city tax, and 1½-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective Sept. 3, 1940, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 8.75 cents; 100-149 gal., 7.75 cents; 150 gal. and over, 7.25 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over 6.5 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over, 6.5 cents. Stanolex fuel oil A, 1-399 gal., 5.75 cents; 400-799 gal., 4.75 cents; 800 gal. and over, 4.5 cents. Stanolex fuel oil B, 1-399 gal., 5.75 cents; 400-799 gal., 4.75 cents; 800 gal. and over, 4.5 cents. Stanolex Bunker C fuel oil, 1-999 gal., 4.5 cents; 1,000 gal. and over, 3.5 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Cons'r tank wag.	Di- v.ded dlr.	Incl. tax	tank wag.
Ohio points	16.0	15.0	5.5	*9.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Cons'r tank car	Dlr. tank wag.	Incl. tax	tank wag.
Atlantic City	11.00	12.60	4.5	7.4
Newark	11.00	12.60	4.5	7.4
Annapolis, Md.	13.35	14.35	5.5	9.5
Baltimore	12.75	13.75	5.5	8.5
Cumberland	14.15	15.15	5.5	10.0
Washington, D.C.	11.00	12.00	3.5	9.5
Danville, Va.	14.95	17.45	6.5	11.0
Norfolk	13.75	16.25	6.5	10.5
Petersburg	14.05	16.55	6.5	11.2
Richmond	14.05	16.55	6.5	10.5
Roanoke	15.25	17.75	6.5	11.0
Charles'n, W. Va.	14.55	17.05	6.5	12.6
Parkersburg	13.85	16.35	6.5	11.2
Wheeling	14.85	17.25	6.5	11.8
Charlotte, N. C.	16.90	17.00	7.5	11.8
Hickory	17.45	18.95	7.5	12.3
Mount Airy	17.30	18.80	7.5	12.2
Raleigh	16.65	16.50	7.5	11.5
Salisbury	16.95	16.00	7.5	11.9
Charleston, S. C.	14.75	17.25	7.5	9.75
Columbia	15.60	18.10	7.5	11.5
Spartanburg	16.30	18.80	7.5	12.7

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at a time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery; 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero.
	Cons'r tank wag.	Net dlr.	Incl. tax	tank wag.
Atlanta, Ga.	16.0	16.0	7.5	8.0
Augusta	17.0	17.0	7.5	9.5
Macon	16.0	16.0	7.5	9.0
Savannah	16.0	16.0	7.5	9.0
Birmingham, Ala.	16.0	16.0	8.5	9.0
Mobile	15.5	15.5	9.5	8.0
Montgomery	18.5	18.5	9.5	10.0
Jackson, Miss.	16.0	16.0	7.5	9.0
Vicksburg	16.0	16.0	7.5	8.5
Jacksonville, Fla.	15.0	15.0	8.5	8.0
Miami	15.5	15.5	8.5	8.0
Pensacola	17.5	17.5	9.5	8.0
Tampa	15.0	15.0	8.5	8.0
Lexington, Ky.	15.5	15.5	6.5	9.0
Covington	13.5	13.5	6.5	9.0
Louisville	15.0	15.0	6.5	8.5
Paducah	14.0	14.0	6.5	8.5

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax, and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Cons'r tank car	Dlr. tank wag.	Incl. tax	tank wag.
Philadelphia, Pa.	12.5	13.5	5.5	10.0
Pittsburgh	13.0	15.0	5.5	10.5
Allentown	13.0	14.5	5.5	10.5
Erie	12.5	15.0	5.5	10.0
*Scranton	12.5	14.25	5.5	10.5
Altoona	13.0	15.0	5.5	10.5
Dover, Del.	...	14.0	5.5	10.5
Wilmington	...	13.5	5.5	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

*Voluntary discount of 1 cent allowed to dealers only.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank truck	Serv. sta.	Incl. tax	tank wag.
San Francisco	16.5	17.5	4.5	11.5
Los Angeles	16.0	17.0	4.5	10.0
Fresno, Calif.	17.5	18.5	4.5	12.5
Phoenix, Ariz.	20.5	21.5	6.5	*17.5
Reno, Nev.	19.5	20.5	5.5	13.5
Portland, Ore.	19.0	20.0	6.5	13.5
Seattle, Wash.	19.0	20.0	6.5	13.5
Spokane	20.5	21.5	6.5	16.5
Tacoma	19.0	20.0	6.5	13.5

*Includes 5-cent state tax.

Discount to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero
	Cons'r tank car	Dir. tank wag.	Incl. tax	tank wag.
Albany	11.5	12.5	5.5	7.3
*Met. New York, Manhat., Bronx, Queens, Brklyn., Staten Island	11.7	12.7	5.5	7.6
Buffalo	12.3	13.4	5.5	7.5
Rochester	12.0	13.8	5.5	8.1
Syracuse	11.9	11.7	5.5	8.2
Portland, Me.	11.0	11.7	5.5	7.4
Manchester, N.H.	12.1	12.5	5.5	8.5
Burlington, Vt.	12.2	12.3	5.5	7.9
Boston, Mass.	10.2	10.5	4.5	7.7
Worcester	10.5	11.5	4.5	7.8
Hartford, Conn.	10.8	11.5	4.5	7.5
New Haven	10.6	11.0	4.5	7.0
Providence, R. I.	9.9	11.4	4.5	7.7

*Does not include 2 per cent city sales tax, which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective August 8, 1940, the company changed its commercial consumer policy in New York and New England to the following:

Full compartment deliveries: Accounts buying less than 20,000 gal. annually, 0.5 cent above the commercial-consumer price; accounts buying from 20,000 to 120,000 gal. annually, commercial-consumer price; accounts buying 120,000 gal. annually and above, 0.25 cent off consumer price. Split compartment deliveries: Delivery of less than a full compartment, 250 gal., commercial-consumer price plus 1 cent. Steel-barrel deliveries: Commercial price plus 3 cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank wag.		Incl. tax	tank wag.
Denver, Colo.	13.5	...	5.5	10.5
Grand Junction	16.5	...	5.5	12.5
Pueblo	15.5	...	5.5	9.0
Casper, Wyo.	16.5	...	5.5	11.5
Chevenne	14.5	...	5.5	11.0
Billings, Mont.	17.5	...	6.5	12.0
Butte	15.5	...	6.5	13.0
Great Falls	17.5	...	6.5	12.0
Helena	15.5	...	6.5	12.5
Salt Lake, Utah	16.0	...	5.5	14.0
Boise, Idaho	18.6	...	6.5	16.0
Twin Falls	21.6	...	6.5	16.5
Albu'que, N. M.	16.0	...	6.5	9.5
Roswell	14.0	...	7.0	8.0
Santa Fe	17.0	...	7.0	9.5

*Includes city tax of 0.5 cent. †Includes state tax of 1 mill.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Cons'r tank car	Dir. tank wag.	Incl. tax	tank wag.
New Orleans, La.	14.25	16.75	8.5	†11.0
Baton Rouge	15.25	17.75	8.5	‡10.5
Alexandria	15.25	17.75	8.5	‡10.5
Lafayette	15.50	18.00	8.5	‡10.0
Lake Charles	15.25	17.75	8.5	‡10.0
Shreveport	14.00	16.50	8.5	‡9.0
Knoxville, Tenn.	18.50	20.00	8.5	12.5
Memphis	16.50	18.00	8.5	11.0
Chattanooga	18.00	15.75	8.5	12.0
Nashville	17.50	16.50	8.5	11.0
Bristol	18.75	18.75	8.5	12.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Oklahoma and Arkansas

CONTINENTAL OIL CO

	Gasoline		Kero.
	Tank wag.	Incl. tax	tank wag
Texarkana, Ark.	13.5	5.5	6.0
Fort Smith	13.5	5.5	6.5
Little Rock	16.0	8.0	8.0
Muskogee, Okla.	13.5	5.5	7.0
Oklahoma City	11.5	5.5	6.5
Tulsa	12.5	5.5	6.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag
Omaha	17.4	15.9	6.5	9.5
McCook	17.5	15.7	6.5	9.9
Norfolk	17.5	15.4	6.5	9.9
North Platte	17.8	15.5	6.5	10.2
Scottsbluff	18.4	16.0	6.5	10.8

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline			Kero.
	Tank wag.	Dlr.	Incl. tax	tank wag.
Dallas, Tex.	11.5	15.5	5.5	6.0
Fort Worth	11.5	15.5	5.5	7.0
Houston	12.0	16.0	5.5	8.0
San Antonio	12.5	17.0	5.5	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline		Kero.
	Tank wag.	Incl. tax	tank wag.
Halifax, N. S.	24.5	10.0	18.0
St. John, N. B.	24.5	10.0	18.0
Montreal, Que.	24.0	8.0	16.5
Toronto, Ont.	24.5	8.0	17.0
Hamilton, Ont.	24.5	8.0	17.0
Winnipeg, Man.	27.5	7.0	22.5
Brandon, Man.	28.0	7.0	22.5
Regina, Sask.	25.0	7.0	20.0
Saskatoon, Sask.	28.0	7.0	23.0
Edmonton, Alta.	25.9	7.0	20.0
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	21.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. of New Jersey reduced the consumer tank-car price of regular gasoline 0.5 cent September 19 at Atlantic City and Newark, N. J.

Continental Oil Co. reduced regular gasoline 1.5 cents at Fort Smith, Ark., September 16 and the kerosene tank-wagon price was lowered 0.5 cent there on the same date. Third-grade motor fuel was reduced 1.5 cents per gallon September 8 at Little Rock, Ark.

Standard Oil Co. of Indiana advanced third-grade tank-wagon prices 0.5 cent per gallon, or to normal if the subnormalcy was less, throughout North Dakota, October 1.

Standard Oil Co. of Nebraska advanced the gasoline tank-wagon price 0.4 cent at Omaha, Neb., September 17 and raised kerosene there 0.5 cent. The dealer-gasoline price was increased 1.3 cents per gallon at McCook and the kerosene quotation was raised 0.4 cent September 17. The Norfolk, North Platte, and Scottsbluff, Neb., dealer-gasoline price was advanced 0.5 cent September 17 and the kerosene tank-

(Continued on Page 91)

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of October 1, 1940

The quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04½	.04¾
63-66 octane	.04	.04¼
60 octane and below	.03½	.03¾
60-62 400 grades:		
72-74 octane (regular)	.04½	.04¾
63-66 octane	.04	.04¼
60 octane and below	.03½	.03¾

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.04½	.04¾
63-66 octane	.04	.04¼
60 octane and below	.03½	.03¾
60-62 400	.03½	.03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.04¾	.05
63-66 octane	.04¼	.04½
60 octane and below	.03¾	.04¼

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)		.04¾
60 octane and below		.04

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04¾	.04⅞
63-66 octane	.04¼	.04½
60 octane and below	.03⅞	.04⅛
60-62 400 grades:		
72-74 octane (regular)	.04¾	.04⅞
63-66 octane	.04¼	.04½
60 octane and below	.03⅞	.04⅛

PENNSYLVANIA (inland refineries)—

74-76 octane (regular)		.06
72-74 octane		.05¾

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.05½	.07¼
54-58 U. S. Motor	.04½	.06¼

EAST COAST (domestic)—

U. S. Motor grades:		
New York (Bayonne)*	.04½	.06
Philadelphia	.05¼	.06½
Boston	.05¼	.06
Baltimore	.05½	.07
Charleston, S. C.	.05¾	.07

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
72-74 octane	.03½	.04⅛
70-72 octane	.03⅜	.04
68-70 octane	.03¾	.04
65-67 octane	.03⅜	.04

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.02½	.02¾
Grade 18-55	.02¾	.03

NORTH TEXAS—

Grade 26-70	.02	.02¼
Grade 18-55	.02¼	.02½

CALIFORNIA—

75-85 375-390	.04½	.05¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.01⅞

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	.03½	.03⅝
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e.p.	.03⅝	.03¾
46-48 gr., 210-230 l.b.p., 480-max., e.p.	.03⅞	.04

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

42-44	.03⅞	.04
41-43	.03¾	.03⅞

NORTH TEXAS—

41-43	.03¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.03¾	.04

ARKANSAS (Ark. and N. La. del.)—

41-43		.04¼

PENNSYLVANIA (inland refineries)—

46	.04⅞	.05
45	.04¾	.04⅞

CHICAGO (Based on Group 3)—

42-44	.04	.04¼
41-43	.03⅞	.04¼

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04½	.05½

NEW YORK (Bayonne, N. J.)—

41-43		.048

GULF COAST (domestic)*—

41-43		.04

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03½	.03⅝
No. 1 prime white, 38-42	.03⅝	.03½
No. 1 straw, 38-40	.03½	.03⅝
No. 2 straw, 32-36	.03¼	.03⅜
No. 3 zero to 10, 28-32	.03⅛	.03¼

NORTH TEXAS—

No. 1 prime white, 38-42		.03½
No. 1 straw, 38-40		.03⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03	.03⅛

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03¼	.03½

CHICAGO (Based on Group 3)—

Range oil	.03½	.03⅝
No. 1 prime white, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03¼	.03½
No. 3, zero to 15, 28-32	.03⅛	.03⅜

NEW YORK (Bayonne, N. J.)—

*No. 1		.048
*No. 2		.041
*No. 4		.041

Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02¾	.03
No. 5, low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH TEXAS—

U.G.I. gas oil, under 35	.02¾	.02¾
No. 5 low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.50	.55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial		.70

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.03
No. 5, low pour point, 18-22	.75	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pour point, 10-16	.60	.70
No. 6, 15 and above, 10-16	.50	.55

PENNSYLVANIA (inland refineries)—

36-40		.04

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.10	1.25
24 plus diesel, per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.65	.75
10-16 (cargo lots)	.65	.75
12-17 (tank cars)	.50	.75
10-17 (high sulfur)	.45	.65
San Joaquin Valley:		
10-18 (tank cars)	.50	.70
24 plus diesel, per bbl.	1.10	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.80	.85

GULF COAST—

No. 2 fuel	.03⅜	.03½
43-47 diesel	.03¼	.03½
48-52 diesel	.03½	.03⅝
53-57 diesel	.03⅝	.03⅞
58-and-above diesel	.03⅞	.04
Diesel bunkers		1.50
Bunker C (bulk cargoes)		.80
Bunker C (bunkers)		.80

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.041
28-30 diesel (lighterage 6¼c per bbl.)		1.70
28-30 diesel (tank cars)		.041
Bunker C (to ocean-going ships in N. Y. Harbor	1.15	1.25
Industrial fuel (tank cars)		.03875

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D. 10-25		.18
150-160 D. 0-10		.13½
150-160 D. 10-25		.13
100-110 D. 0-10		.13
100-110 D. 10-25		.12½
Steam refined:		
600 dark green (untreated)		.07

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour point		.14½
15 pour point		.13½
25 pour point	.12	.14
Steam refined:		
600	.07	.08
650	.08	.09
600 flash	.09	.10
630 flash	.11	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:		
150-3		.08
180-3		.08½
200-3		.08½
250-3		.10
280-3		.10½
280-4		.10
300-3½		.11
350-3½		.11½
400-3½		.12
500-3½		.12½
600-3¼		.13
100-2½ paraffin oil, 10-25		.05¼
10-25 pour point:		
200-3		.08
250-3		.09½
280-3		.10
280-4		.09½

GULF COAST—

Pale oils:		
100-3	.05¼	.05½
200-3	.07¼	.07½
300-3	.07¼	.07⅝
500-3½	.08¼	.08½
750-3½	.08⅝	.08⅞
1,200-3½	.08¾	.08⅞
2,000-4		.09
3,000-4		.10½
Red oils:		
200-5-6	.06¾	.07
300-5-6	.07¼	.07½
500-5-6	.08	.08¼
750	.08⅝	.08½
1,200-5-6	.08½	.08⅝

CALIFORNIA (moving to dom. market)

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis., at 70° F., 3 color, 400-405 flash, Zero pour point		.22½
10 pour point		.21½
15 pour point		.20½
25 pour point	.19	.20
200 vis. at 70° F., 3 color:		
Zero pour point		.24½
10 pour point		.23½
15 pour point		.22½
25 pour point	.21	.22

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.02¼	.03

PENNSYLVANIA (inland refineries)—

122-124 (A.m.p.) w.c. scale	.02¼	.02⅝
124-126 (A.m.p.) w.c. scale	.02½	.02⅝

NEW YORK—

Wax in bags fully refined:		
125-127 (A.m.p.) wax		.0560
128-130 (A.m.p.) wax	.0560	.0570
130-132 (A.m.p.) wax		.0585
133-135 (A.m.p.) wax		.0615
135-137 (A.m.p.) wax		.0640
Crude scale:		
124-126 (A.m.p.) w.s.	.02¼	.02⅝
124-126 (A.m.p.) y.s.	.02¼	.02⅝
Petrolatum in barrels, carload lots:		
Dark green	.02125	.02625
Amber	.02375	.02875
Extra amber	.02625	.03000
Lily white	.04375	.05125
Snow white	.05125	.06000
Cream	.03375	.04125

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.03⅝
60-62 400		.03¾
61-63 390	.03⅞	.04
64-66 375	.03⅞	.04

LOS ANGELES—

U. S. Motor grades:		
Above 69 octane	.05¼	.05⅜
65-69 octane	.05¼	.05½
60-65 octane	.04½	.05

KEROSENE

GULF COAST—

41-43 water white		.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbl.)—

Cylinder stocks:		
600 S.R. unfiltered	.15½	.16½
630 S.R. unfiltered	.16½	.17½
600 flash, S.R.	.17½	.18½
650 flash, S.R.	.20	.21
Bright stock:		
Light, 25 pour point	.20½	.21

NEUTRAL OIL

200-3 color		.27
150-3 color	.25	.25½

PARAFFIN WAX

NEW YORK (prices per lb.)—

123-125 A.m.p.		.05600
125-127 A.m.p.		.05600
128-130 A.m.p.		.05850
133-135 A.m.p.		.06150
135-137 A.m.p.		.06400
Crude scale:		
124-126 w.s.	.02½	.02⅝
124-126 y.s.	.02½	.02⅝

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)* $1.10
Sinclair Prairie Oil Marketing Co. October 2, 1939. Cities Service Co. October 5, 1939. Shell Oil, Inc., October 5, 1939.
Van, Tex. (Oct. 11, 1938)* $0.93
Talco, Tex. (Oct. 2, 1939)* ..... .65
Rodessa, Tex. ..... See note below
See North Louisiana gravity schedule
Cass and Panola counties, Texas ..... See note below
Altus and Tipton† ..... See note below
Cayuga, Tex. (Oct. 2, 1939) $0.78
Clay Creek, Tex. ..... .85
Long Lake, Tex. (Jan. 20, 1940) ... 1.08

*Humble Oil & Refining Co. †Gulf Refining Co. Pure Oil Co.'s Van price, 93 cents, effective Oct. 13, 1938.

Cass and Panola counties, Texas, effective October 12, 1938, by Magnolia Petroleum Co., same as North Louisiana prices in Column 5 gravity schedule.

Altus and Tipton, Oklahoma, starting at below 25° at 71 cents, 2-cent spread to 40° and above at $1.03. Cayuga posted by Pan American Pipe Line Co. Clay Creek by Sun Oil Co. Long Lake by Sinclair Oil Marketing Co.

West Texas

See gravity table.
Fisher County, Texas (Apr. 1, 1939) ..... See note below
Pecos County (Oct. 11, 1938)* $0.78
Pecos shallow (Oct. 11, 1938)† ..... .65

*Shell Oil Co., Inc., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Oil Co., Inc.

Fisher County, Texas, by Shell Oil Co., Inc., below 25°, 68 cents; 25°, 70 cents, with 2-cent spread to 40° and over at $1.

North Louisiana and Arkansas

Shreveport, La. (Sept. 7, 1939) ... $1.05
See note below
Smackover, Ark. (Oct. 5, 1938)* ..... .73
Buckner, Magnolia, and Village, Ark. (Oct. 5, 1938)* ..... See note below
Schuler, Jones sand (Sept. 13, 1939) .79
Schuler, Reynolds sand (Sept. 13, 1939) ..... .91
Schuler (Sept. 27,1940)† ..... .55-.95
Tullos and Urania ..... .89
Cotton Valley, La. (distillate) (Dec. 23, 1938)* 1.20
Cotton Valley (Holloway sand) Dec. 16, 1939 ..... 1.00
Lisbon, La. (Apr. 29, 1939) ..... See note below
Atlanta, Ark. (Sept. 13, 1939) ..... .93
Magnolia, Ark. (Sept. 13, 1939) ..... .93
Dorcheat, Ark. (Feb. 10, 1940) 1.00
University, La. (Sept. 11, 1939) ..... See note below

*Smackover posted by Standard Oil Co. of Louisiana, Oct. 5, 1938; by Magnolia Petroleum Co., Oct. 12; by Gulf Refining Co., Oct. 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

The above Schuler, Atlanta, and Magnolia, Arkansas, flat prices posted by Lion Oil Refining Co. Shreveport flat prices posted by Caddo Crude Oil Purchasing Co. and Atlas Oil Corp.

Buckner, Magnolia, and Village, Arkansas prices effective Sept. 13, 1939, by Standard Oil Co. of Louisiana, start at below 25° at 63 cents, with 2 cents added for each degree up to 40 and over at 95 cents.

Effective Sept. 7, 1939, Standard Oil Co. of Louisiana posted gravity prices in Shreveport field beginning at below 25°, 73 cents: 25-25.9°, 75 cents, with 2 cents added for each degree up to 40 and over at $1.05. Dorcheat posted by Standard of Louisiana.

†Effective 7 a.m. Sept. 27, 1940, Standard Oil Co. of Louisiana posted Schuler, Ark., crude below 21° at 55 cents with 2-cent differential to 40° and above 95 cents.

In the Lisbon, Louisiana, field, effective Sept. 14, 1939, Gulf Refining Co. and Caddo Crude Oil Purchasing Co. posted 27-27.9°, 66 cents, with 2 cents added for each degree up to 35 and over at 82 cents.

In the Baton Rouge (University) field, Louisiana, effective Sept. 11, 1939, Standard Oil Co. of Louisiana posted below 20°, 79 cents, with 3 cents added for each degree upward to 26-26.9° at $1, and then 2 cents added for each degree up to 40 and over at $1.28. Posting discontinued Mar. 14, 1940.

Effective June 10 Pure Oil Co. posted a flat price of $1 per barrel for crude in the Creole, Cameron Parish, Louisiana, field. This is a 4-cent increase.

Gulf Coast

Seabreeze, Willow Slough, and LaBelle, Tex. (Sept. 14, 1938)***$1.10
Conroe, Tex. (Oct. 11, 1938)* 1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)‡ ..... See note below
Gibson, La. (Oct. 11, 1938)† $1.04
Garden Island, La. (Oct. 12, 1938)‡ . 1.24
Lafitte, La. (Oct. 12, 1938)‡ 1.04
Cleveland, Tex. (Oct. 12, 1938)¶ 1.14
Hardin, Tex. (Sept. 14, 1939)* 1.10
Tepetate, La. (Oct. 11, 1938)§ 1.03
Ville Platte, La. (Oct. 11, 1938)§ 1.03
Abbeville, La. (Jan. 1, 1939)§ ..... See note below
Bosco, La. (Dec. 3, 1938)‖ $0.93
Creole, La. (Oct. 13, 1938)‖ ..... .96
Gueydan, Sweet Lake, and Louise, La. (Oct. 13, 1938)‖ ... See note below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 2, 1939)**
Segno and Wing (Oct. 2, 1939)** ..... See note below
Happytown, La. (Jan. 12, 1940)† .. 1.00
Livingston (Oct. 11, 1938)† $1.10

*Humble Oil & Refining Co. †Shell Oil Co., Inc., ‡Texas Co. §Continental Oil Co. ‖Pure Oil Co. ¶Magnolia Petroleum Co. **Gulf Refining Co. ***Sun Oil Co. Hardin prices by Humble and Sun companies.

Black Bayou, etc., starts at below 20° at 79 cents; 20°-20.9°, 81 cents; 21°-21.9°, 83 cents; then a 3-cent spread to 26°-26.9°, 98 cents; then a 2-cent spread at 40° and over at $1.14. Abbeville starts at below 36°, 92 cents; 2-cent spread to 40° and over at $1.02. Gueydan, etc., starts below 20°, 79 cents, 3-cent spread to 26°-26.9° at $1, and 2-cent spread to 40° and over at $1.28. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 20°, 86 cents, 2-cent spread to 34° and above at $1.16. Shell Oil Co., Inc., withdrew as a purchaser in the Schwab-Wilcox area, Texas, on Apr. 8, 1940.

Hackberry, East and West, effective October 2, 1939, by Stanolind Oil & Gas Co. Below 20 gravity 86 cents, 2 cents added for each degree up to 34° and over at $1.16.

In the Bunkie and Eola pools in Louisiana, effective October 23, 1939, by Standard Oil Co. of Louisiana, below 25° 83 cents, 2 cents added for each degree up to 40° and over at $1.15.

Iowa, La., effective October 11, 1938, by Shell Petroleum Corp. and on April 1, 1939, by Shell Oil Co., Inc.: Below 18°, 75 cents; 18°-18.9°, 77 cents; 2-cent spread to 21°-21.9° at 83 cents; then a 3-cent spread to 26°-26.9° at 98 cents; then a 2-cent spread to 34° and above at $1.14.

Southwest Texas

Salt Creek, Darst Creek, Hilbig, Carroll, Clark and Zoboroski (Oct. 11, 1938)* $0.96
Pettus (Oct. 11, 1938)* 1.29
Flour Bluff (Dec. 3, 1938)* 1.23
Jim Wells County (Oct. 2, 1939)* 1.23
Darst Creek (Oct. 12, 1938)† ..... .96
Darst Creek and Bruner (Oct. 13, 1938)‡ ..... .96
Luling (Oct. 12, 1938)† ..... .87
Lytton Springs (Oct. 12, 1938)† ..... .99

Crude Prices by Gravities

Gravity—	Oklahoma and Kansas	Oklahoma and Kansas	Oklahoma and Kansas	North and Central Texas	Louisiana and Arkansas	East Central Texas	Gray County, Texas	Carson and Hutchinson Counties, Texas	West Texas, and Lea County, N. M.	Raccoon, Satsuma, and Tomball, Texas	Gulf Coast	Anahuac, Dickinson, Texas	Refugio, Texas	Mirando-Duval, Beaumont-West Beaumont, Texas	Golden Meadow, Louisiana	Lockport, Iowa, Cameron Meadows, Louisiana	Bunkie and Eola, Louisiana	Artesia, Jackson, Maljamar, N. M.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Below 18																$0.74		
18-18.9									$0.53							.76		
19-19.9									.53		$0.86	$0.81	$0.91	$0.86		.78		
20-20.9	$0.70		$0.60						.55		.88	.83	.93	.88		.80		
21-21.9	.72		.63						.57		.90	.85	.95	.90		.82		
22-22.9	.74		.66						.59	$0.95	.92	.87	.97	.92		.85		
23-23.9	.76		.69			$0.78			.61	.97	.94	.89	.99	.94		.88		
24-24.9	.78		.72	$0.71	$0.73	.80			.63	.99	.96	.91	1.01	.96	$0.90	.91		
Below 25																	$0.83	
25-25.9	.80	$0.58	.75	.73	.75	.82			.65	1.01	.98	.93	1.03	.98	.90	.94	.85	
26-26.9	.82	.63	.78	.75	.77	.84			.67	1.03	1.00	.95	1.05	1.00	.90	.97	.87	
27-27.9	.84	.68	.81	.77	.79	.86			.69	1.05	1.02	.97	1.07	1.02	.90	.99	.89	
28-28.9	.86	.73	.84	.79	.81	.88	$0.72	$0.67	.71	1.07	1.04	.99	1.09	1.04	.90	1.01	.91	$0.63
29-29.9	.88	.78	.87	.81	.83	.90	.74	.69	.73	1.09	1.06	1.01	1.11	1.06	.90	1.03	.93	.63
30-30.9	.90	.82	.90	.83	.85	.92	.76	.71	.75	1.11	1.08	1.03	1.13	1.08	.90	1.05	.95	.65
31-31.9	.92	.86	.92	.85	.87	.94	.78	.73	.77	1.13	1.10	1.05	1.15	1.10	.92	1.07	.97	.67
32-32.9	.94	.90	.94	.87	.89	.96	.80	.75	.79	1.15	1.12	1.07	1.17	1.12	.94	1.09	.99	.69
33-33.9	.96	.96	.96	.89	.91	.98	.82	.77	.81	1.17	1.14	1.09	1.19	1.14	.96	1.11	1.01	.71
34-34.9	.98	.98	.98	.91	.93	1.00	.84	.79	.83	1.19	1.16	1.11	1.21	1.16	.98	1.13	1.03	.73
35-35.9	1.00	1.00	1.00	.93	.95	1.02	.86	.81	.85	1.21	1.18	1.13	1.23	1.18	1.00	....	1.05	.75
36-36.9	1.02	1.02	1.02	.95	.97	1.04	.88	.83	.87	1.23	1.20	1.15	1.25	1.20	1.02	....	1.07	.77
37-37.9	1.04	1.04	1.04	.97	.99	1.06	.90	.85	.89	1.25	1.22	1.17	1.27	1.22	1.04	....	1.09	.79
38-38.9	1.06	1.06	1.06	.99	1.01	1.08	.92	.87	.91	1.27	1.24	1.19	1.29	1.24	1.06	....	1.11	.81
39-39.9	1.08	1.08	1.08	1.01	1.03	1.10	.94	.89	.93	1.29	1.26	1.21	1.31	1.26	1.08	....	1.13	.83
40 and over	1.10	1.10	1.10	1.03	1.05	1.12	.96	.91	.95	1.31	1.28	1.23	1.33	1.28	1.10	....	1.15	.85

Column 1—Effective October 17, 1938, by Standard Oil Co. of Indiana. By Gulf Refining Co., October 13, 1938. Carter Oil Co. schedule and prices same from 30° upward, but on lower gravities pays below 21° 60 cents, with 3 cents added for each degree up to and including 29-29.9°, effective October 13, 1938. Gulf Oil Corp. starts at below 25° 78 cents, October 13, 1938. Texas Co. schedule starts at 28-28.9° at 86 cents. Pure Oil Co. same as Standard of Indiana's schedule, effective October 14, 1938.

Column 2—Sinclair Prairie Oil Marketing Co. February 16, 1939.

Column 3—Magnolia Petroleum Co. effective October 12, 1938; Shell Petroleum Corp., October 22, 1938; Shell Oil Co., Inc., April 1, 1939.

Column 4—Effective December 3, 1938, by Humble Oil & Refining Co. in Central Texas. By Magnolia Petroleum Co. in East Central and in North and Central Texas, excepting that it starts at below 29° at 79 cents, effective December 3, 1938. Texas Co. in North and Central Texas, same as Magnolia's but effective October 12, 1938. Gulf Refining Co. same as Magnolia's, effective October 13, 1938. Stanolind Oil Purchasing Co. in Cooke and Montague counties, schedule starts at below 21°, 60 cents, with a 2-cent spread upward to 40° and over at $1, effective October 17, 1938.

Column 5—Standard Oil Co. of Louisiana, effective October 5, 1938. Met by Gulf Refining Co. October 13; met by Texas Co. October 12.

Column 6—Humble Oil & Refining Co., October 11, 1938.

Column 7—Humble Oil & Refining Co., effective December 3, 1938. Sinclair Prairie Oil Marketing Co., October 11, 1938. Texas Co. quotes "Panhandle sweet crude," beginning with 34-34.9°, at 84 cents, with 2-cent spread to 40° and over at 96 cents, and "Panhandle sour crude," 79 cents for 34-34.9°, with a top of 91 cents for 40° and over, effective October 12. Magnolia Petroleum Co. met Humble prices throughout, effective December 3. Gulf Refining Co. quotes "Panhandle sweet crude" at below 29°, 72 cents with a 2-cent spread, and a top price of 96 cents for 40° and above, and "Panhandle sour crude" below 29°, 67 cents, with a top of 91 cents for 40° and above effective October 13. Phillips Petroleum Co. schedule for sweet crude in Gray, Carson, and Hutchinson counties, starts at below 29°, 72 cents, with a spread of 2 cents up to 96 cents for 40° and over, effective February 7, 1939.

Column 8—Humble Oil & Refining Co., effective December 3, 1938. Sinclair Prairie Oil Marketing Co., October 11, 1938. Texas Co. quotes "Panhandle sweet crude" at 34-34.9°, 84 cents, with a top of 96 cents for 40 gravity, and "Panhandle sour crude" at 34-34.9°, 79 cents, with a top of 91 cents for 40° and over, effective October 12. Gulf Refining Co. quotes "Panhandle sweet crude" at below 29°, 72 cents, with a top of 96 cents for 40° and over and "Panhandle sour crude" at below 29°, 67 cents, with a top of 91 cents for 40° and above, effective October 13. Phillips Petroleum Co. schedule for sour crude in Carson, Moore, and Hutchinson counties, starts at below 29° at 67 cents, with a spread of 2 cents up to 91 cents for 40° and over, effective February 7, 1939.

Column 9—Humble Oil & Refining Co., effective October 11, 1938. Texas Co. schedule starts at below 26°, 65 cents, and ends at 36° and over at 87 cents, effective October 12. Gulf Refining Co. starts at below 26° at 65 cents and ends at 40° and over at 95 cents, effective October 13. Magnolia Petroleum Co. schedule starts below 25°, 63 cents, and ends at 40° and above at 95 cents, effective October 12. Sinclair Prairie Oil Marketing Co. schedule same as that of Magnolia, effective October 11, but revised on March 24, 1939, to stop at 36° and over at 87 cents. Stanolind Oil Purchasing Co. schedule same as that of Humble, effective October 11. Stanolind Oil & Gas Co. (Winkler County) starts at below 26°, 65 cents, with a 2-cent spread, and a top of 95 cents for 40° and above, effective October 11, 1938. Effective September 1, 1939, Shell Oil Co., Inc., posted Yoakum County crude, starting at below 20°, 53 cents, with 2 cents added for each degree up to 36° and over at 87 cents. Effective March 31 Atlantic Refining Co. added Gaines Cou ty to its price schedule.

Column 10—Humble Oil & Refining Co., effective October 11, 1938. Magnolia Petroleum Co., in Tomball, effective October 12.

Column 11—Effective October 2, 1939, by Humble Oil & Refining Co. in Texas Coast. By Sinclair Prairie Oil Marketing Co. in Texas Coast, October 3, 1939. By Texas Co. at $1.16 in Texas and Louisiana Coast, October 2, 1939, schedule stopping at 34° and over. By Sun Oil Co. in Texas and Louisiana Coast, October 2, 1939. By Gulf Refining Co. in Louisiana October 2, 1939, excepting that schedule stops at $1.16 for 34° and above. By Gulf Refining Co. in Texas, effective November 1, 1939.

Column 12—Effective by Humble Oil & Refining Co. October 2, 1939. By Sun Oil Co. in Anahuac, October 2, 1939. By Gulf Refining Co. in Anahuac, October 2, 1939. On November 1, 1939, Gulf Refining Co. applied these prices to Anahuac, Hull (New), Pierce Junction, Orange, Thompson (deep).

Column 13—Effective October 2, 1939, by Humble Oil & Refining Co. and Continental Oil Co. By Texas Co. up to 28° and over at $1.09 October 2, 1939. Atlantic adopted Humble price schedule November 7, 1939, in Refugio and applied it also to Greta.

Column 14—Effective October 2 by Humble Oil & Refining Co. By Sun Oil Co. in Mirando alone, stopping at 24-24.9° at 96 cents. By Stanolind Oil & Gas Co. in West Beaumont, alone, October 2, 1939. Gulf Refining Co. in West Beaumont, October 2, 1939. By Magnolia Petroleum Co. in Beaumont, October 2, 1939. By Texas Co. in Duval and Mirando, stopping at 28-28.9° at $1.09. Continental Oil Co. in Mirando and Duval, October 2, 1939.

Column 15—Effective October 2, 1939, by Texas Co.

Column 16—Magnolia Petroleum Co., effective October 12, 1938.

Column 17—Standard Oil Co. of Louisiana, effective October 23, 1939.

Column 18—Continental Oil Co., effective October 11, 1938.

Mirando (Oct. 12, 1938)† .....
Government Wells (Oct. 13, 1938)..
See note below

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.

Government Wells posted by Sun Oil Co. starts at 20° at 77 cents, 3-cent spread to 24°-24.9° at 89 cents.

Middle Western States

OHIO OIL CO.

(Effective August 21 and 23, 1940)

Illinois old fields	$1.00
Illinois basin	1.15
Princeton, Ind.	1.00
Western Kentucky (Aug. 21, 1940)†	1.10
Birk City, Ky. (June 9, 1939)¶	.90
Corydon, Ky. (June 9, 1939)	.90
Greendale, Porter, Crystal and Wise, Mich. (Aug. 24, 1940)*†	1.12
Buckeye, Bentley, Edenville, Beaverton, Mich. (Aug. 24, 1940)*	1.10
Freeman-Redding, Mich. (Aug. 24, 1940)‡	1.07
Arenac, Mich. (Aug. 24, 1940)*	.92
West Branch, Mich. (Aug. 24, 1940)*	.92
Allegan-Kent and Ottawa, Mich. (Aug. 25, 1940)	1.18
Bloomingdale and Columbia, Mich. (Apr. 27, 1940)¶	1.08
Muskegon	1.00
Sherman and Freeman, Mich. (Aug. 25, 1940)‡	1.07
Eastern Kentucky:	
Big Sandy River (Aug. 21, 1940)†	1.12
Kentucky River (Aug. 21, 1940)†	1.20

*Simrall Corp. †Ashland Refining Co. ‡Pure Transportation Co. §Sohio Oil Co. Bloomingdale posted by Tri-Lakes Corp. Kent County by Naph-Sol Refining Co. On May 25, 1940, Sohio posted $1 per barrel in the Griffin field in Gibson County, Indiana, and Wabash County, Illinois, and the North Griffin, South Griffin, Phillipstown, New Harmony and Irons in Wabash and White counties, Illinois. Allegan, Kent and Ottawa posted by Commonwealth Pipe Line Co.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)*	$0.92
Elk Basin, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, light, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, heavy (Oct. 11, 1938)†	.40
Lance Creek, Wyo. (Oct. 11, 1938)*	.77
Rock Creek, Wyo. (Oct. 11, 1938)*	1.00
Iles, light, Colo. (Oct. 11, 1938)†	.98
Iles, heavy, Colo. (Oct. 11, 1938)†	.92
Dutton Creek, Wyo. (Oct. 11, 1938)†	
See note below	
Frannie, light, Wyo. (Oct. 11, 1938)†	$0.55
Frannie, heavy, Wyo. (Oct. 11, 1938)†	.42
Hamilton dome, Wyo. (Oct. 11, 1938)†	.35
See note below	
Midway, Wyo. (Oct. 11, 1938)†	
Salt Creek Tensleep Crude, Wyo. (Oct. 11, 1938)†	$0.646
Salt Creek (Oct. 11, 1938) See note below	
Canon City, Colo. (Oct. 11, 1938)‡	$0.90
Florence, Colo. (Oct. 11, 1938)‡	.90
Cut Bank, Mont. (Jan. 1, 1940)	1.00
Kevin-Sunburst, Mont. (Jan. 1, 1940)	.80
Cat Creek, Mont. (Oct. 11, 1938)‡	1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡	.98
Lance Creek, Wyo. (Oct. 11, 1938)‡	.77
Lea County, New Mexico	
See West Texas gravity schedule‡	
Artesia, Jackson and Maljamar	
See gravity table‡	
Fort Collins and Wellington, Colo.	
See note below	
Eddy County, New Mexico (Oct. 11, 1938)§	$0.77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. §Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crudes start at below 29°, 86 cents, 2-cent spread up to 40° and over at $1.10. Salt Creek crude, excepting Tensleep, takes Standard Oil Co. of Indiana's Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective Oct. 11, discontinued posting prices in Greybull-Torchlight, Wyoming, and Hogback and Hospah, New Mexico. In Fort Collins and Wellington, Colorado, effective Oct. 11, 1938, by Continental Oil Co. 28-28.9°, 81 cents, with 2 cents added for each degree up to 40° and over at $1.05. Cut Bank and Kevin-Sunburst posted by Producers Refining Co.

Eastern States

SOUTH PENN OIL CO.

(Effective August 28, 1940)

Pennsylvania Grade oil in National Transit lines (Bradford field)	$1.85
Pennsylvania Grade oil in southwest Pennsylvania lines	1.50
Pennsylvania Grade oil in Eureka Pipe Line lines	1.44
Corning grade oil in Buckeye Pipe Line Co. line	.97

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.

(Effective August 28, 1940)

Bradford, Pa.	$1.85
Allegany, N. Y.	1.85

PENNZOIL CO.

(Effective August 28, 1940)

Group A	$1.78
Group B	1.77
Group C	1.76
Group D	1.75
Group E	1.73

PURE OIL CO.

(Effective August 28, 1940)

West Virginia	$1.44

QUAKER STATE OIL REFINING CORP.

(Effective August 28, 1940)

Southern Ohio (Pa. Grade):	
In Buckeye Pipe Line lines	$1.40
In Eureka Pipe Line lines	1.44

Canada

ONTARIO

(Nov. 6, 1939, by Imperial Oil, Ltd.)

Petrolia	$2.10
Oil Springs	2.07
Bothwell	2.10

TURNER VALLEY

(Sept. 12, 1940, by Imperial Oil, Ltd.)

Crude-oil price schedule starts at $1.08, for 33°-33.9°, including 2 cents for each degree gravity with top price for 64° and over 1.70

These prices f.o.b. producers' field tankage.

Gulf Coast Markets

(Continued from Page 87)

not much call for the latter products but at the same time there is not much being made. The 43-47 diesel index product was being quoted generally about on a par with No. 2 fuel around 3¼ to 3½ cents, with 53-and-above diesel-index oils being worth from 3⅞ to 4 cents.

Movement of gasoline continued routine to the established contract outlets of the supplying companies. The price situation was unchanged, with sellers generally willing to take most any offer to dispose of products.

New York Markets

(Continued from Page 87)

ported unchanged with 25-pour, 150-viscosity neutral at 19, 200-viscosity at 21 and bright stock, 12. It was expected that the recent reduction in steam-refined prices would be reflected in bright-stock price reductions but the latter are holding.

There were two evidences of improvement in the statistical position of Pennsylvania lubricating oils forthcoming last week. Bright-stock inventories were reported at 431,305 bbl. on August 31 by the National Petroleum Association, a reduction of 7 per cent from the July 31 total. This indication of improvement, however, was offset to some degree by an increase in neutral inventories in that month.

The second evidence of improvement in the Pennsylvania situation was the low level of runs in the first half of September. The average of 61,600 bbl. was the lowest for any similar period in recent years and contrasted with the 82,000-bbl. average that was maintained through a large part of last fall and winter. The actual reduction in bright-stock inventories and the indicated cutback in lubricating-oil production should impart some firmness to the Pennsylvania market.

Tank-Wagon Changes

(Continued from Page 88)

wagon quotation at Scottsbluff was raised 0.3 cent on the same date.

Standard Oil Co. of Kentucky advanced tank-wagon prices on gasoline 1 cent per gallon at Atlanta, Ga., September 19 and reduced the kerosene quotation there 2 cents September 21. Kerosene prices were also lowered 0.5 cent per gallon September 16 at Augusta, Ga., Vicksburg, Miss., Pensacola, Fla., Lexington, Covington, Louisville, and Paducah, Ky. The tank-wagon gasoline price was lowered 1 cent per gallon September 20 at Covington, Ky., and advanced 1 cent September 16 at Lexington. Tank-wagon price on gasoline was advanced 2 cents at Macon, Ga., September 16 and was reduced 1 cent September 21.

Socony-Vacuum Oil Co., Inc., made general reductions in the tank car and tank-wagon gasoline prices throughout the New York and New England territory September 25 ranging from 0.1 to 1.7 cents per gallon. The points at which reductions were made with the amounts of decrease in tank-car and tank-wagon prices shown in that order, follow: Albany, 0.2; New York, 0.1 and 0.3; Buffalo, 0.3 and 0.2; Rochester, 1.1 and 0.2; Syracuse, 1.1 and 0.2; Portland, Me., 1.2 and 0.6; Burlington, Vt., 0.2 and 1.7; Boston, 0.2; Worcester, Mass., 0.2 and 0.2; Hartford, Conn., 0.2; New Haven, 0.2; Providence, R. I., 0.2 and 0.1.

STANDARD OIL CO. OF CALIFORNIA

Crude-oil prices at the well effective February 1, 1940

(All gravities above those quoted take highest price offered in that field)

Gravity—	Signal Hill (Long Beach) (El Segundo)	Wilmington	Seal Beach	Huntington Beach	Inglewood	Playa Del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Greeley-Canal	Cole's Levee Richfield Western	Mountain View	Elk Hills	Buena Vista, Midway-Sunset, Lakeview	Lost Hills	Coalinga	Kettleman Hills
14-14.9	$.65	$.60	$.64	$.63	$.64	$.65	$.61	...	$.65	$.61	$.61	$.62	$.63	...	...	...	...	$.60	$.60	$.60	$.60	
15-15.9	.65	.60	.64	.63	.64	.65	.61	...	.65	.61	.61	.62	.63	...	...	...	...	.60	.60	.60	.60	...
16-16.9	.65	.60	.64	.63	.64	.65	.61	...	.65	61	.61	.62	.63	...	...	...	...	.60	.60	.60	.60	...
17-17.9	.65	.62	.64	.63	.68	.65	.61	...	.65	.61	.61	.62	.63	...	...	...	...	.60	.60	.60	.60	...
18-18.9	.65	.64	.64	.63	.71	.65	.65	...	.68	.61	.61	.62	.63	...	...	...	...	.60	.60	.60	.60	...
19-19.9	.69	.69	.64	.67	.75	.70	.69	...	.72	.61	.65	.62	.63	...	...	...	$.60	.64	.64	.64	.61	...
20-20.9	.73	.73	.64	.72	.79	.76	.74	...	.75	.65	.69	.62	.67	...	...	...	.60	.69	.69	.69	.62	...
21-21.9	.78	.78	.64	.76	.82	.81	.78	...	.79	.99	.73	.62	.72	$.63	...	...	.64	.74	.74	.74	.66	...
22-22.9	.82	.82	.69	.81	.86	.86	.82	...	.82	.73	.77	.66	.76	.63	...	...	.68	.79	.79	.78	.70	...
23-23.9	.86	.86	.75	.85	.89	.92	.86	$.71	.86	.78	.82	.71	.81	.67	...	...	.71	.84	.84	.82	.74	...
24-24.9	.90	.90	.80	.90	.93	.97	.90	.77	.89	.82	.86	.75	.85	.72	...	...	.75	.89	.89	.86	.78	...
25-25.9	.95	.95	.86	.94	.96	1.02	.95	.82	.93	.86	.90	.80	.89	.77	...	...	.79	.94	.94	.90	.82	...
26-26.9	.99	.99	.91	.99	1.00	1.08	.99	.88	.96	.90	.94	.84	.94	.82	...	...	.83	.99	.99	.95	...	...
27-27.9	1.03	1.03	.97	1.03	1.04	...	1.03	.94	1.00	.94	.98	.89	.98	.87	$.83	$.92	.87	1.04	1.04	.99	...	...
28-28.9	1.07	1.07	1.02	1.07	1.07	f.o.b.	1.07	.99	1.03	.98	...	.93	1.02	.91	.86	.96	.91	1.09	1.09	1.03	...	...
29-29.9	1.10	1.10	1.07	1.11	1.10	our	1.10	1.04	1.06	1.02	...	.98	1.06	.96	.90	.99	.95	1.14	1.14	1.07	...	...
30-30.9	1.14	1.14	1.12	1.15	1.14	pipe	1.14	1.09	1.09	...	...	1.02	1.10	1.01	.94	1.02	.99	1.19	1.19	1.11	...	...
31-31.9	...	...	...	...	1.17	line	1.17	1.14	...	...	...	1.07	1.14	1.05	.98	1.06	1.02	1.24	1.24	...	...	...
32-32.9	...	...	...	...	1.20	...	1.20	1.19	...	...	...	1.11	1.18	1.09	1.02	1.09	1.06	1.29	1.29	...	...	...
33-33.9	...	...	...	...	...	...	...	1.24	...	...	...	1.15	1.22	1.14	1.06	1.13	1.10	1.34	1.34	...	...	$1.12
34-34.9	...	...	...	...	...	...	...	1.29	...	...	...	1.20	1.28	1.19	1.10	1.16	1.14	...	...	...	...	1.17
35-35.9	...	...	...	...	...	...	...	1.34	...	...	...	1.24	...	1.23	1.14	1.20	...	...	...	...	...	1.21
36-36.9	...	...	...	...	...	...	...	1.39	...	...	...	1.28	...	1.27	1.18	1.23	...	...	...	...	...	1.25
37-37.9	...	...	...	...	...	...	...	1.44	...	...	...	1.33	...	1.31	1.22	1.26	...	...	...	...	...	1.29
38-38.9	...	...	...	...	...	...	...	1.49	...	...	...	1.37	...	1.36	1.25	1.30	...	...	...	...	...	1.33
39-39.9	...	...	...	...	...	...	...	1.54	...	...	...	1.42	...	...	1.29	1.34	...	...	...	...	...	1.38
40-40.9	...	...	...	...	...	...	...	1.59	...	...	...	1.46	...	...	1.33	1.37	...	...	...	...	...	...
41-41.9	...	...	...	...	...	...	...	...	...	...	...	1.50	...	...	1.37	1.40	...	...	...	...	...	...
42-42.9	...	...	...	...	...	...	...	...	...	...	...	1.54	...	...	1.41	1.44	...	...	...	...	...	...
43-43.9	...	...	...	...	...	...	...	...	...	...	...	1.59	...	...	1.45	1.47	...	...	...	...	...	...
44-44.9	...	...	...	...	...	...	...	...	...	...	...	1.63	...	...	1.49	1.51	...	...	...	...	...	...
45-45.9	...	...	...	...	...	...	...	...	...	...	...	1.67	...	...	1.53	1.54	...	...	...	...	...	...
46-46.9	...	...	...	...	...	...	...	...	...	...	...	1.71	...	...	1.57	1.57	...	...	...	...	...	...
47-47.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.61	...	...	...	...	...	...	...
48-48.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.64	...	...	...	...	...	...	...

For Newhall, McKittrick, Kern River, Round Mountain and Kern Front crude, Standard posts 60 cents per barrel for all grades. For Elwood Terrace crude (free on board ship), 33-33.9, $1.21, with 4 cents added for each degree up to and including 37° and over at $1.37; Wheeler Ridge crude, 19 to 21.9°, 60 cents; 22-22.9, 63 cents; 23-23.9, 67 cents; 24-24.9, 71 cents; 25° and over, 75 cents. On May 18, Union Oil Co. adopted Standard of California prices in all fields in which they both purchase.

West Central Texas

(Continued from Page 56)

tion 208, Block F, C.C.S.D.&R.G.N.G. Survey. The well drilled its pay from 2,990 to 3,050 ft. and from 3,200 to 3,250 ft. in the regular pay level of the McElroy field. The company's 2 Eddleman has been announced for 440 ft. from the east and 2,200 ft. from the south lines of the same section as the discovery. It is a quarter-mile-southeast outpost to the discovery extension.

Loving County Wildcat

Exploration for production 4½ miles east of the Wheat field in Loving County was announced by H. C. McAuley as 1 E. Hale was staked. It is 330 ft. from the southeast and southwest lines of Section 60, Block 1, W.&N.W. Survey. Little activity has been seen in the area for several years, thus the wildcat is expected to be closely watched.

SOUTHERN WEST TEXAS COMPLETIONS

(24-hour gages, Permian lime)

Crane County

McElroy field: Gulf 226 McElroy, 1,105 bbl., open casing, 650-qt. shot, 2,730-2,919 ft.
Jordan field: Snowden & McSweeney 8 University, 518 bbl., pumping, 3,000 gal. acid, 3,518-67 ft.
Tubb field: Humble 42 Tubb, 2,743 bbl., open tubing, 1,000 gal. acid, 4,242-4,400 ft.
Humble 1-E Tubb, 137 bbl., 7 per cent water, 9,000 gal. acid, 4,358-4,420 ft., P.B. 4,590 ft.

Ector County

Jordan field: Atlantic 8-B University, 782 bbl., 8,000 gal. acid, 590-qt. shot, 3,500-3,655 ft.
North Cowden field: Delaney 1-B Smith, 1,297 bbl., open casing, 650-qt. shot, 4,145-4,440 ft.
Humble 4-B Henderson, 940 bbl., 1-in. choke, 670-qt. shot, 3,950-4,197 ft.
Stanolind 1-C Midland farms, top anhydrite 1,860 ft., Yates sand 3,120 ft., brown lime 4,245 ft., solid lime 4,540 ft., dry at T.D. 4,877 ft.
Johnson field: Great Western 8 Johnson, 1,422 bbl., open tubing, 810-qt. shot, 3,905-4,188 ft.
Stanolind 19 Johnson, 59 bbl., open casing, 306-qt. shot, 4,110-4,220 ft.
Goldsmith field: Gulf 308 Goldsmith, 264 bbl., open tubing, 87-qt. shot, 4,106-76 ft.
Gulf 310 Goldsmith, 1,463 bbl., open tubing, 3,500 gal. acid, 4,195-4,255 ft.
Gulf 311 Goldsmith, 1,012 bbl., open tubing, 4,000 gal. acid, 4,174-4,232 ft.
Oil Development 2-D Cummins, 246 bbl., open tubing, 6,000 gal. acid, 4,140-4,231 ft.
Tide Water 1-A T.&P., 1,760 bbl., natural, open casing, 4,030-4,190 ft.
Foster field: Stanolind 46 Witcher, 1,198 bbl., open casing, 480-qt. shot, 3,910-4,100 ft.

Pecos County

Shearer field: Pecos-Onodaga Oil 2 Shearer, dry at 1,588 ft.

Upton County

McCamey field: Shell 19 Bowen, old T.D. 2,164 ft., new T.D. 2,210 ft., treated 1,000 gal. acid, 146 bbl., pumping, 20 bbl. water.
Shell 21 Bowen, old T.D. 2,164 ft., new T.D. 2,201 ft., treated 1,000 gal. acid, 148 bbl., pumping, 43 bbl. water.
Shell 25 Bowen, old T.D. 2,173 ft., new T.D. 2,265 ft., treated 1,000 gal. acid, 491 bbl., pumping, 27 bbl. water.
Shell 31 Bowen, old T.D. 2,151 ft., new T.D. 2,212 ft., treated 1,000 gal. acid, 132 bbl., pumping, 8 bbl. water.
Shell 33 Bowen, old T.D. 2,145 ft., new T.D. 2,205 ft., treated 1,000 gal. acid, 120 bbl., pumping.
Rodman & Easter 1 Humble-Hughes, old T.D. 2,489 ft., new T.D. 2,528 ft., dry.
Wildcat 1½ mi. S McElroy field: Texas Pacific 1 Eddleman, top anhydrite 1,120 ft., Cowden anhydrite 1,805 ft., Yates 2,070 ft., lime 2,846 ft., 233 bbl., pumping, 900-qt. shot, 2,990-3,250 ft., T.D.

SOUTHWEST TEXAS DRILLING REPORT

Brewster County

H. G. Storey 1 Wilson, Sec. 3, Blk. 212, T.&St.L. Sur., old T.D. 2,545 ft., drilling 2,660 ft. toward new contract depth of 3,550 ft.

Crane County

Gulf 1-F University, SE SE Sec. 22, Blk. 31, University Sur., drilling 5,753 ft.

Ector County

Forest Development Corp. 1 Bradley, SE SE Sec. 18, Blk. 43, Twp. 3s, T.&P. Sur., drilling 3,630 ft.
Forest Development Corp. 1-H Moss, SW NW Sec. 48, Blk. 43, Twp. 2s, T.&P. Sur., S.D. 3,830 ft.

Crockett County

Moore Exploration and Olson Drilling 1 Couch, W. S. Piggs Sur., top Yates sand 1,063 ft., T.D. 1,256 ft., reaming 7-in. at 1,100 ft.

Hudspeth County

Haymon Krupp 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur., 5½-in. casing cemented at 6,202 ft., T.D. 6,224 ft., cementing cavings last report.

Pecos County

S. D. Pattillo 1 O'Neil, Sec. 74, Blk. 10, H.&G.N. Sur., Ordovician test, T.D. 615 ft., lowering 10¾-in. casing, preparing to move in materials.
Landreth Prod. 1 McDonald, SE SE Sec. 37, Blk. 11, H.&G.N. Sur., location.
S. D. Pattillo 1 Hoffman, SE NW Sec. 6, Blk. 141, T.&St.L. Sur., 2,000-ft. test, drilling 760 ft.
Taubert, McKee & Siemonelt 1 Crockett, SW Sec. 4½, Blk. 3, H.&T.C. Sur., set casing 2,905 ft., gas 3,150 ft., drilling 4,440 ft.

Presidio County

Wilcox 1 Conring, Sec. 102, Blk. 4, H.&T.C. Sur., running 10¾-in. casing at 1,038 ft.
Wilcox 2 Jones-Coffield, Sec. 38, Blk. 34, H.&T.C. Sur., P.B. to 2,369 ft. from 2,399 ft., preparing to P.B. again, last report.

Sutton County

Domain 1 G. S. Allison, SW NE Sec. 91, Blk. 9, T.W.& N.G. Sur., Ellenburger lime test, S.D. 1,098 ft.

Terrell County

E. A. Thomason 1 Phelps, SE SE Sec. 73, I.&G.N. Sur., 5½-in. 1,492 ft., drilling 1,505 ft.
H. H. Sides 1 Rose, Sec. 15, Blk. 148, T.&St.L. Sur., location.

Reeves County

Roy Johnson 1 Perkins, Sec. 18, Blk. 7-C, P.S.L. Sur., drilling 1,512 ft.

Upton County

J. F. Slaughter 1 Porter, Sec. 184, Blk. E, C.C.S.D.& R.G.N.G. Sur., location.
B. H. Kean 1 Taylor, Sec. 22, Blk. 2-B, G.C.&S.F. Sur., S.D. 2,670 ft.

Ward County

Fitzpatrick & Slack 1 Wilson, Sec. 145, Blk. 34, H.& T.C. Sur., 1¼ mi. SE of discovery well, drilling 310 ft.
Gulf 5 Wristen, Sec. 13, Blk. 5, H.&T.C. Sur., scheduled Ordovician test, top Ellenburger 9,022 ft., preparing to cut drill pipe near T.D. 9,187 ft. due to unobtainable fish at T.D., P.B. 8,687 ft., preparing to drill by drill pipe and packer stuck at 9,187 ft., T.D.
Sinclair Prairie 1 Wirt Davis, 330 ft. NW, 2,310 ft. SW lines, Sec. 32, Blk. 4, H.&T.C. Sur., 3,500-ft. test, broken oil shows from 2,827 to 3,190 ft., T.D. 3,300 ft., hole 13° off vertical at 3,300 ft., bridged back to 2,500 ft., preparing to drill new hole.

Winkler County

Gulf 147 O'Brien, SE Sec. 11, Blk. F, G.M.M.B.&A. Sur., drilling 525 ft.

TEXAS PANHANDLE

AMARILLO, Tex., Sept. 30.—A new north outpost test in Hutchinson County has been staked which totals two for the area in as many weeks. About 15 days ago E. J. Dunigan located a test just southeast of the old Humble Oil & Refining Co. producer on the Pedigo Survey. The new location this week is J. M. Huber 1 Riley, 6 miles north of the Humble well and 330 ft. from the south and west lines of Section 13, Block 16-M, A.B.&M. Survey. The location is a mile northeast of a well drilled a short time ago by Shamrock Oil & Gas which was completed as a dual producer to extend the dolomite pay to the north. The new test will do much to determine whether or not the dolomite fingers out toward the north or whether it runs normal and continues to contain oil.

There were 11 new locations announced during the week in the Panhandle district, two in Carson, five in Gray, two in Hutchinson, and one each in Wheeler and Moore counties. There were 10 oil wells and 1 gas well completed during the week in the Panhandle.

PANHANDLE COMPLETIONS

(24-hour gages)

Carson County

Cities Service 2-E Magnolia fee, 42 bbl., pumping, 310-qt. shot, 2,955-3,037 ft.
Magnolia 89 fee (244), 135 bbl., pumping, 400-qt. shot, 2,965-3,065 ft.
Texas 15 Quinn, 20 bbl., pumping, 180-qt. shot, 3,052-3,130 ft.

Hutchinson County

Clay Bros. 1-A Carver, 85 bbl., pumping, 5,000 gal. acid, 3,240-45 ft.
Burch 5 Weatherly, 572 bbl., flowing, 3,030-70 ft., P.B. from 3,090 ft.
Huber, Inc. 8 Weatherly, 743 bbl., flowing, 2,935-3,070 ft.
Power Pet. 1 Hale, 258 bbl., pumping, 275-qt. shot, 2,970-3,068 ft.
Stanolind 16 Watkins B, 298 bbl., pumping, 600-qt. shot, 2,812-2,914 ft.
Stanolind 19 Watkins B, 210 bbl., pumping, 585-qt. shot, 2,765-2,855 ft.
Texas 32 Lewis, 20 bbl., pumping, 2,930-80 ft.

Moore County

Canadian River Gas 3 Thompson B, 73,500,000 cu. ft. gas, 5,000 gal. acid, 2,740-3,157 ft.

DRILLING REPORT

Childress County

Texas 1 P. B. Smith, NW NW Sec. 97, Blk. 9, H.&G.N. Sur., 7,500-ft. contract, prepare to abandon, drill pipe recovered.

Cottle County

Ramsey Pet. 1 Lynch, SE SW Sec. 66, J. Poitevent Sur., 5,000-ft. test, location.

King County

Superior Oil of Tulsa 1 Martin, Sec. 174, H.&T.C. Sur., drilling 6,300 ft.

Motley County

Humble 1 Matador, Sec. 29, Blk. J, B.S.B.&C.N.G. Sur., drilling 3,650 ft.

Swisher County

Krupp-Flaherty 1 Kleen, Sec. 120, Blk. 10-M, 6,500-ft. test, top salt 1,020 ft., S.D., casing 1,747 ft.

SOUTHEAST NEW MEXICO

HOBBS, N. M., Sept. 30.—New emphasis was placed during the week on the Halfway field of Lea County as its first flowing well was indicated, all completions to date in this relatively recently opened field being pumping wells. A deep test was assured for the 3,650-ft. Skelly area when Skelly Oil Co. announced intentions of carrying its 13 Sims to 3,800 ft. in search of a deeper pay level.

The new flowing well in the Halfway field is North Shore Corp. 1-A Texas Co.-State, at the north end of the field and located in the NW NE 16-20-32. It is about ½ mile north of the main portion of the field and is ¼ mile west of an old 4,000-ft. failure drilled several years ago by the Empire Oil Co. After logging several shows of oil between 2,484 and 2,500 ft., the well blew in to flow wild for 5 hours when oil and gas was struck at 2,505 ft. Five and one-half-inch casing has been cemented at 2,994 ft. and plug is scheduled to be drilled the coming week. Since all previous completions in this field opened last year by the Westlea Oil Co. have been pumpers, it is thought that the new well may draw new drilling to the north end of the field.

First deep test for Skelly field is Skelly Oil 13 Sims, located 660 ft. from the north and 1,980 ft. from the east lines of 2-23-37, in the approximate center of the field. The well indicated normal production from the regular producing horizon of the field, however, the high structural tops are reported the reason for the deepening which is planned.

SOUTHEAST NEW MEXICO DRILLING REPORT

Chaves County

Roxana 1 Franks.....NW NW 17-9s-25e
16 mi. NE of Roswell, location.
Roxana 1 Maull.....NE NW 11-12s-25e
Material on ground.
H. Steinberger 1 Headley.....NW SW 26-14s-29e
Rigging up cable tools.
Martin 1 Stephens.....NW NE 22-15-29
Old failure drilling deeper, S.D. 2,340 ft.

Dona Ana County

Armstrong 1 Baker.....NW SW 4-23-1
15½-in. at 60 ft.

Eddy County

Dooley & Haynes 1 Martin.....SE NW 9-18-25
Drilling 640 ft.
Knox & Featherstone 1 Hatchett.....SW NE 14-20-26
Drilling 215 ft.
Beddingfield & Walker 1 Seale.....SE SE 10-20-27
Drilling 1,085 ft.
Talmadge 1 State.....SW NE 24-16-28
Slight show oil 2,505-15 ft., S.D.O. 2,605 ft.
Jones & Yates 1 Everest.....NE SE 15-18-26
Drilling 938 ft.
Trojan 1 Grant.....SW NE 33-20-25
S.D. 1,590 ft.
Shumacher 1 Levers.....NE NE 33-16-29
S.I. 2,875 ft.
M. Yates 1 Williams.....NE NW 25-18-26
Location.
Black & Ratliff 1 Simmons.....SE NW 9-21-25
Cor. S.D.R. 633 ft.
A. & M. Petroleum 2 State.....NW SE 15-21-17
S.D. 350 ft.
Clark & LaNeve 1 Boulter.....SE NW 28-19-27
Oil sand 885-90 ft., 7-in. set at 880 ft., prepare to drill plug.

Lea County

Stanley & Weiner 1 Saunders.....NE NE 20-21-38
Drilling 3,128 ft.
Ventura Oil 1 Lowe.....SW SE 26-13s-37e
Drilling 6,282 ft.
Great Western Prod. 1-D State.....SE SE 30-12-32
Slight show oil and salt water from 3,022-32 ft., drilling 3,685 ft., 7-in. set at 3,048 ft.

Otero County

R. H. Ernest 1 Located Land Co.....SE SE 20-25-7
S.D. 3,729 ft.

Sierra County

Clyde R. Wofford 1 Graham-State.....SW SW 8-14s-2w
Location.

California Fields

(Continued from Page 71)

8⅝-in. liner landed 3,896 ft., 2,932 ft. of 3-in. tubing. Santa Barbara County.

San Miguelito District

Continental 18 Grubb.....23-3n-24w
Flowed 2,793 bbl., 30.6-gravity, 3.2 per cent cut, 2,300,000 cu. ft. gas, two 48/64-in. beans, T.D. 6,770 ft., 7-in. water string cemented 5,402 ft., 1,409 ft. of 5-in. liner landed 6,769 ft. and perf. at intervals, 6,470 ft. of 2½-in. tubing including 2,491 ft. of 2-in. on bottom. Ventura County.

COASTAL DISTRICT WILDCATS

Coal Oil Point District

Bolsa Chica 191-7 Permit.....25-4n-29w
Repairing pier and rigging up. Santa Barbara County.

Santa Maria District

Union 2-1 Bradley.....36-10n-34w
Rigging up rotary, this is an outpost well and may prove interesting. Santa Barbara County.

South Mountain District

Cal. Sec. 1 S.M.....17-3n-20w
T.D. 4,500 ft., P.B. to 4,250 ft., oil sand cored at 4,490-4,500 ft., carried no saturation, slight blow of gas at 3,500 ft. Ventura County.

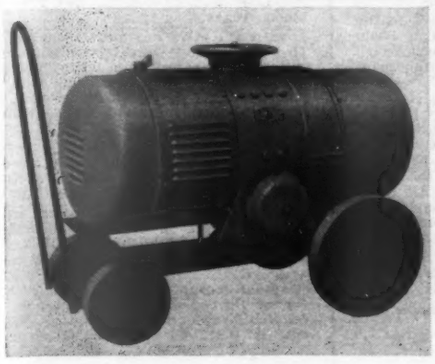
Shiells Canyon District

O. C. Field 3 Bankline.....3-3n-19w
Rigging up rotary. Ventura County.

EQUIPMENT PROGRESS...

Wilson Announces Dual-Voltage Switch for Arc Welders

The Wilson Welder & Metals Co., Inc., 60 East Forty-second Street, New York, has just announced a new dual-voltage switch for installation on arc-welding



machines, such as the Wilson "Hornet," when they must be used on either of two line voltages at different times. The new device, known as the Type CH dual-voltage switch, can be used on any motor employing a.c. current, provided the motor and starter are reconnectable for two voltages.

Normally, adjusting a motor so that it will operate at a different line voltage requires changing the heater elements, disconnecting and reconnecting the motor and magnet coil leads. This operation takes anywhere from ½ to 2 hours. With the switch installed, however, the change can be made in less than a minute. Raised figures on the switch base indicate the line voltage for which the switch is set.

The new dual-voltage switch has two main parts—a base which is mounted directly on the machine, and a removable top cover which is held in place by a center stud and nut. The cover has three equally spaced tabs which fit between bosses on the base. The top cover can be set on the base in either of two different positions — each corresponding to a line voltage. Adaptation of the dual-voltage switch to different line voltages is simple and fast. The center nut is loosened and the top cover is rotated until the desired line voltage figures are visible. No other adjustment is needed.

The standard dual-voltage switch is designed for 220-440 volts of a delta-connected motor—the type used on Wilson welders. It reconnects the stator winding and also adjusts the holding coil of the magnetic starter and heater relays. Other connections, such as 220-440 volts of Y-connected motor and of Y-delta connection (380-220) are all readily obtainable.

Sterling Pump Acquires Turbine Pump Division

Sterling Pump Corp., Hamilton, Ohio, which has, for many years, been recognized as one of the world's leading manufacturers of deep-well turbine pumps, vertical centrifuge pumps for industrial purposes, and a complete line of hydro-jet pumps, has acquired the Turbine Pump Division of the Roots-Connersville Blower Corp., of Connersville, Ind., company officials have just announced. Roots-Connersville horizontal turbine pumps are generally used for water systems, industrial purposes, and condensate work for boiler-feed waters, and, according to Henry J. McKenzie, president of the Sterling company, "the acquisition of this line places Sterling in a strong position for the furnishing of any type of pumping equipment."

A transfer of inventory has already been made from Connersville to Hamilton, according to Mr. McKenzie, and all former Roots-Connersville installations will now be serviced, if and when necessary, by an enlarged staff of Sterling engineers available from coast to coast. This policy of increased service for all Sterling customers is in line with the policy expressed by Mr. McKenzie, who was recently appointed president of Sterling Pump Corp., in addition to his former duties of general manager. Mr. McKenzie succeeds Maurice Rothschild, who recently retired as president but will continue as a director of the corporation.

Hubbard New President of Greenfield Tap & Die Corp.

Recent personnel changes at Greenfield Tap & Die Corp., of Greenfield, Mass., include election of Pres. Donald G. Millar to chairmanship of the board, replacing Col. Frederick H. Payne, who resigned to devote his entire time to national-defense work as chief of the Hartford Ordnance District.

Mr. Millar was succeeded as president by Howard M. Hubbard of Cleveland, Ohio. For the last 10 years Mr. Hubbard has been associated with the Harris-Seybold-Potter Co., as secretary-treasurer and director. He was also managing director of the company's Seybold division and of its Canadian marketing division. Mr. Hubbard holds the degree of bachelor of mechanical engineering and is a graduate of the Harvard Graduate School of Business.

The company has regretfully accepted the resignation of Francis A. Smith, for several years vice president and general manager. Mr. Smith has been associated with the company in various executive capacities for over 20 years.

Stentz Joins National Tank

S. L. Stentz joined the sales department of the National Tank Co. September 1 as sales engineer. He graduated from the Carnegie Institute of Technology in engineering in 1931. Before entering sales he spent 7 years in heavy foundation construction and steel-mill operation around the Pittsburgh district. Since 1934 he has represented the A. M. Byers Co. of Pittsburgh as district representative in the northern Mid-Continent.

Promotions of Leeds & Northrup Executives Announced

W. Richison Schofield, formerly chief engineer of Leeds & Northrup Co., Philadelphia, Pa., has recently been appointed director of engineering. John W. Harsch,

W. R. SCHOFIELD *JOHN W. HARSCH*

assistant chief engineer, has been advanced to chief engineer, and Mr. Harsch's former position has been filled by the promotion of John F. Quereau.

Mr. Schofield joined Leeds & Northrup in 1916 and since 1928 has held the position of chief engineer. An authority in pyrometry and automatic control, he holds important patents in these fields. He is an active member of the A.S.M.E. committee on industrial instruments and regulators, and the A.I.E.E. committee on electrochemistry and electrometallurgy.

Mr. Harsch joined Leeds & Northrup in 1924 and in 1928 became assistant chief engineer. He is largely responsible for the design of the Homo tempering and Homocarb carburizing furnaces; is vice chairman of the Philadelphia chapter of A.S.M., and as a member of A.S.T.M. is chairman of the subcommittee on lift testing nickel-chromo resistor materials.

Mr. Quereau has been with Leeds & Northrup since 1929, is the inventor of a number of thermocouple and resistance thermometer devices, and an active member of A.S.M.

HERCULES-LUPFUR ENGINE SALES CO. ORGANIZED AT TULSA

J. A. Lupfer and C. M. Peterson, both of whom were formerly with Worthington Machinery Corp. of Oklahoma, have organized the Hercules-Lupfer Engine Sales Co. and are located at 124 North Boston Avenue, Tulsa. They are exclusive agents for Oklahoma and Kansas for Hercules engines and power units and Farrel-Birmingham gear-reducing and speed-increasing units and Briggs oil clarifiers for industrial engines.

Gas and diesel engines from 7½ to 125 hp. and a large stock of spare parts for all the equipment they sell is carried in the Tulsa headquarters shown here. Walter Domongalla is in charge of the service department.

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FOR SALE Oil and gas leases and small production located in Kentucky shallow field, also tracts of proven Fluorspar and zinc deposits. Reports on request. W. P. HARLEY, Bowling Green, Kentucky.

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NEW MEXICO
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ROY G. BARTON, Hobbs, N. M.

EAST TEXAS Trinity sand wildcat starting. Close in leases afford you ten to fifty for one bets next sixty days. E. CROFT, PROCTOR, TEXAS.

LEASE for Oil and Gas. 200 acres in Sec. 64, McMullen Co. and 480 acres in Sec. 340, Coke Co. Texas, and 160 acres in Sec. 15, Tp. 16s, SR. 15e, in Plaquemines Parish, La. (Also for trapping.) Owner J. Manz, Rt. 2, Goddard, Kan.

WILL SELL OR LEASE
All oil, gas, coal and other mineral rights in property known as Eagle Coal Co.; 12,000 acres; located at Stearns, McCreary Co., Kentucky. Railroad runs through property. Address: Harry A. Dempsey, oil and gas producer, 518 Leader Bldg., Cleveland, Ohio.

TENNESSEE next big play has started. 1000 acres 5 yr. leases nearly solid none condemned Moodyville Structure Pickette Co. Tenn. mighty good aprx half mile from two producers 750' lower Sunnybrook possibly nine pay sands favorable report by C. W. Wilson Dept of geology Vanderbilt University Nashville. Will consider $15 per acre cash and $15 in oil payments out of ⅛ of gross production. Geol. report & plats furnished. Box K-801, The Oil and Gas Journal, Tulsa, Okla.

WANTED. Capital to develop Oil and Gas lease in producing area of Russell County, Kansas. Write Box 302, Benkelman, Nebraska.

HAVE lease on school and church grounds which join in Sec. 8, 2S-7E, Western Wayne County, which is ½ mile south of Black Panther 1000 bbl. well brought in recently. Want lease drilled at once Have 200 acres in Clay County, Illinois near production, 180 in Fayette County, Illinois, 5 miles northeast of Bond County Spindler wells. Leo H. Graves, Farina, Ill.

Leases and Drilling Blocks

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CRANE CO., oil possibilities, cheap fee land, 3 mi. E Ward Gulf-Western drilling. J. G. SMITH, 215 Littlefield Building, Austin, Texas.

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OIL ACCOUNTANT, 17 yrs.' experience drilling, production, refining, Federal-state-SS taxation, desires new connection with progressive firm. Address Box K-791, The Oil and Gas Journal, Tulsa, Okla.

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YOUNG man wants to start at bottom and study selling oil field supplies or equipment. Box K-800, The Oil and Gas Journal, Tulsa, Oklahoma.

REFINERY TECHNICIAN AND SUPERINTENDENT. Experienced in manufacture of oils, waxes, asphalts, greases, etc., also in design and construction of plants for manufacture of high melting point waxes. Thirteen years' experience. Reply to Box K-780, The Oil and Gas Journal, Tulsa, Okla.

EXPERIENCED chemical engineer now employed desires position with progressive firm. B.S. degree in engineering. 12 years practical experience processing, management and refining operations. Qualified refinery engineer and Supt. Can furnish references. Address Box K-672, The Oil and Gas Journal, Tulsa, Okla.

Help Wanted

DESIRE to contact rotary drillers who worked in Wyoming prior to 1929. Address P. O. Box 2603, Tulsa, Oklahoma.

SALESMAN by Seamless Tube and Pipe mill. 30 years or younger. Technical college training preferred with some steel product sales experience. Supply full particulars, experience and training by letter in own hand writing, with recent photograph, to Box K-794, The Oil and Gas Journal, Tulsa, Okla.

WELDING engineer, graduate metallurgist with experience in welding practice. Battelle Memorial Institute, Columbus, Ohio.

WANT representative, with oil field experience in each oil state to sell patented article far advanced of those on market. Requirements: dependability, salesmanship, car, $400.00 cash bond. P. O. Box 142, Tulsa, Okla.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guver, Inc., Wilmington, Delaware.

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Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

CORPORATE ORGANIZING and Financing Reorganizations — Transfer Service. Brown Hartwell Company—110 East 42nd St., New York.

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WAREHOUSE space, 1500 feet or part, with desk, phone and shipping service. Southwest Equipment Co., Dallas, Texas.

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Tulsa, Oklahoma

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10,000 Ft. 2½" seamless tubing, used in flowing wells only.

10,000 Ft. 7" O.D. 26# seamless casing, once run.

15,000 Ft. 4½" O.D. seamless drill pipe equipped with both regular and full hole tool joints.

In addition to the above we have 20,000 Ft. screw line pipe in Oklahoma; also drilling rig capable of drilling to 6500 feet, complete stock of line pipe, casing, drilling and pumping equipment.

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Drilled only 250 feet

3,750 feet 13.30 lb. Grade D, Pittsburgh Special, Internal Upset, with Reed Full Hole Tool Joints, Used by Morter Drilling Company of Ardmore to drill in only four wells approximately 50 feet each. Located at Me-Tex Supply Company, Hobbs, New Mexico.

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Ingersoll Rand 4 X V G 2, Direct connected gas driven two stage compressor, 150 H. P. with all auxiliary equipment. Located in the East Texas field. Operated intermittently for fifteen months, excellent condition. MERRY BROS. & PERINI, INC., ABILENE, TEXAS.

FOR SALE:

2000 Feet 6⅝ inch O. D. 24 lbs. 10 thd. Range 2 Seamless Casing 65c foot. Wichita, Kansas. First Class Condition—Ready to Run.

JAY KORNFELD
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FOR SALE—Cable-tool drilling outfit complete with steel derrick, 120 HP Clark drilling engine, no tools. Capable drilling 5,000 feet. Located in Young County, Tex. Wilson Spudding and clean-out unit complete with all tools, light plant, steel doghouse and mast. Located in Pottawatomie County, Oklahoma. Address Box 1098, Shawnee, Okla.

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278,000-A. New Mexico Ranch, valleys & mountains, year-round pasture for cattle & sheep, highly improved; superb hunting & fishing—America's most magnificent ranch at a bargain. Howard Ingram, Perrine Bldg., Oklahoma City, Oklahoma.

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1940 OIL AND GAS FIELD MAP
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OPPORTUNITY to invest five to ten thousand dollars with operating company owning two casinghead gas plants wanting to install profitable Butane plant. Very attractive proposition. Box K-803, The Oil and Gas Journal, Tulsa, Okla.

CANADIAN FIELDS

Test Nears Pay Southwest Of Turner Valley Field

By VICTOR LAURISTON

CHATHAM, Ont., Sept. 28.—In the Sheppard Creek district, south of Turner Valley, Alberta Pacific Consolidated 1, LSD 6, 7-16-2w5, got the Madison limestone at 5,483 ft. and is resuming after cementing 6⅝-in. casing around 5,503 ft. The upper lime so far as penetrated shows no indications of water. Some good oil shows were encountered in the Blairmore and Kootenay formations, but the Madison is regarded as the main potential crude horizon. Location is approximately 12½ miles south and a little west of the most southerly producer in the Turner Valley field. The structure is, however, regarded as either an extension of the Turner Valley structure or of a parallel fold to the west. Dr. J. O. G. Sanderson, of Calgary, who reported on the structure for the company, estimated that the lime would be encountered at 5,470 ft., and if the lower formations correspond with those in Turner Valley, the main producing horizon should be reached around 5,900 to 6,000 ft.

Several tests have been drilled in the same general area including one by Alberta Asociated Oilfields in the same section started in 1917 and ultimately carried to 2,860 ft. after encountering oil shows at 2,300 and 2,800 ft. and developing substantial gas pressure. The present well, however, is the first to prove the Madison limestone, indicating prospects of either an important southerly extension of the Turner Valley producing area or a possible new field. The test was drilled jointly by Alberta Pacific Consolidated Oils and McDougall-Segur Exploration Co.

For several weeks past there has been marked leasing activity in the area south of Turner Valley, extending from Township 14 in the far south to Township 17. Should production be encountered in the Sheppard Creek well, drilling is likely to be resumed on a number of tests in this and adjacent areas which failed to reach the lime but have been left standing without definite abandonment.

Farther south Oilfields Development 1, LSD 7, 7-13-2w5, in the Willow Creek area, has derrick up and water lines laid and is installing machinery. Test will likely spud early in October. Location is on the south branch of Willow Creek on a structure favorably reported by Dr. J. S. Stewart. The Madison lime is expected around 3,200 ft., with the main production about 3,700 ft.

Turner Valley Completion

In West Central Turner Valley, Pacific Petroleum 5, LSD 6, 7-19-2w5, finished in the Madison limestone at 8,094 ft., has completed its Conservation Board tests, making 68 bbl. in the final hour, or at a rate of 1,632 bbl. a day. Before acidizing, it made 609 bbl. a day. Early official tests showed 2,260 lb. bottom-hole pressure, with gas-oil ratio under 1,000 ft. An allowable around 1,000 bbl. is expected, making it one of the largest producers in the field.

Tests in the Foothills

On the Pouce Coupe structure in the northern foothills west of Peace River, Guardian Oil Co. 1, 7-80-12w6, is below 6,125 ft. after encountering several oil and gas shows.

On the Brazeau structure west of Edmonton, Home Oil 1, LSD 16, 7-43-17w5, is continuing production tests at various potential horizons. Though an initial gas flow was estimated between 8,000,000 and 9,000,000 cu. ft. a day, a commercial producer seems unlikely; but geological information secured in the drilling will help in the location of a second test.

In the Clearwater area, Ram River Oils 2, 1-37-11w5, is below 694 ft. after striking a pocket of gas which blew the hole clear of water. An oil show was met at 527 ft., after which the drill entered a crevice of the Devonian, which had to be cemented. A core taken from 660 ft. shows traces of brown crude. Clear Oils 1, LSD 8, 2-35-10w5, is resuming from 50 ft.

Steveville Field

In the Steveville field, 110 miles east of Calgary, Standard Oil of British Columbia has secured permit for No. 2 in LSD 3, Section 13-20-12w4. Location is 2 miles east and a mile south of Standard 1 Princess, which encountered several heavy gas flows but failed to develop commercial crude production.

Border Fields

On the Blood Indian Reserve near Lethbridge, Northwest Co. 1, LSD 3, 20-5-23w4, is rigging. Location is on the more southerly of two structures defined by seismographic survey and on both of which Northwest Co., a subsidiary of Imperial Oil, has options to drill. Test will spud early in October.

In the Taber field, Border Petroleums 1, LSD 5, 32-19-17w4, is preparing to test showings encountered around 3,480 ft. C. B. Magrath and associates are arranging to reopen the old Plains Petroleum 2 and put it on the pump. The well at one time pumped between 40 and 50 bbl. a day of heavy crude, but operations were discontinued earlier in the year.

ONTARIO DRILLING

Malahide Township: Union Gas 52, 900,000 cu. ft. gas.
Union 53, Lot 29-5, 808,000 cu. ft. gas, 1,070 ft.
Haldimand field, Rainham Township: Union Gas 249, Lot 4-3, 27,000 cu. ft. gas at 950 ft.
North Cayuga Township: Union 250, Lot 47-1n, dry, 814 ft.
Chatham field, Kent County: Union Gas 23, Lot 3-8, Camden Gore, dry, 1,822 ft.
Mosa Township, Middlesex County: Geo. Rawlings 1, Lot 29-7, McGillivray Township, dry, 1,535 ft.
North Norwich Township: W. J. Aikins 2, Lot 8-6, dry, 1,120 ft.

INDEX TO ADVERTISERS

A

Abercrombie Pump Co.
AC Spark Plug Division of General Motors Corporation
Acme Fishing Tool Co.
Aero Exploration Co.
Air Reduction Sales Co.
Ajax Iron Works
Alco Products Division of American Locomotive Company
Allis-Chalmers Mfg. Co. 65
Allison, R. J. 75
American Air Filter Co., Inc.
American Blower Corporation
American Bosch Corporation
American Cable Division of American Chain & Cable Co., Inc.
American Cast Iron Pipe Company
American Flange & Mfg. Co.
American Hoist & Derrick Co.
American Iron & Machine Works Back Cover
American Locomotive Company, Diesel Engine Division
American Meter Company
American Roller Bearing Co.
American Rolling Mill Co., The
American Steel & Wire Company
Armstrong Bros. Tool Co.
Armstrong Machine Works 74
Ashcroft Gauge Division 71
Athey Truss Wheel Co.
Auer, C. L., and W. W.
Austin-Western Road Machinery
Axelson Manufacturing Company

B

B and M Construction Corp.
Baash-Ross Tool Company
Babcock & Wilcox Tube Company, The
Badger & Sons Co., E. B.
Baker Oil Tools, Inc.
Baldwin-Duckworth Division of Chain Belt Company 1
Bantam Bearings Corp.
Baroid Sales Division, National Lead Company
Barret, William M., Inc.
Beaird Corporation, J. B. 70
Bechtel Co., W. A.
Bethlehem Supply Company
Bethlehem Steel Co.
Braden Steel Corporation
Bradford Motor Works, Inc.
Brance-Krachy Co., Inc.
Brauer Machine & Supply Company
Brewster Company, The
Bridgeport Machine Company, The
Bristol Company, The
Broderick & Bascom Rope Co. 52
Brodie Co., Ralph N.
Brown Instrument Company, The
Bruning, Charles Co., Inc.
Buck Clamp Company
Buckeye Traction Ditcher Co.
Bucyrus-Erie Co.
Buda Co., The
Burgess Battery Co.
Butler Manufacturing Co.
Byron Jackson Co.

C

Cable, Jo H.
Cameron Iron Works, Inc. 2
Cardwell Mfg. Co., Inc.
Carey Company, The Philip
Carnegie-Illinois Steel Corporation
Cast Iron Pipe Research Association, The
Caterpillar Tractor Co.
Cavins Company
Century Electric Company
Cessna Aircraft Company
Chain Belt Company
Chaplin-Fulton Mfg. Co., Inc.
Chapman Valve Mfg. Co., The
Chevrolet Motor Division, General Motors Sales Corporation
Chicago Bridge & Iron Company Inside Front Cover
Chiksan Tool Co. 75
Clark Brothers Company
Classified Advertising 94-95
Cleveland Trencher Company
Climax Molybdenum Company
Columbia Steel Company
Columbian Steel Tank Co.
Continental National Bank of Fort Worth
Continental Oil Co.
Continental Motors Corp.
Continental Supply Company, The 44
Cooper, Fred E.
Cooper-Bessemer Corp., The
Core Laboratories, Inc.
Crane Co. 5
Crutcher-Rolfs-Cummings
Curtin, W. H., & Co., The

D

D & M Machine Works 75
Darling Valve & Mfg. Co.
Davis Regulator Mfg. Co., The
Dayton Rubber Mfg. Co., The
Dearborn Chemical Co.
Dempsey-Wilson Construction Co.
Diamond Chain & Mfg. Co.
Dodge Division, Chrysler Corporation
Dowell Incorporated 8
Dragon Mfg. Co., The 71
Dresser Mfg. Co., The
Drilling Equipment Directory

D

Duff-Norton Manufacturing Co., The
Du Pont de Nemours & Co., Inc.
Dumametallic Corp.

E

Eagle-Picher Lead Co.
Eastman Oil Well Survey Co.
Economy Electric Lantern Co. 80
Elastic Stop Nut Corp.
Electrical Facilities, Inc.
Emsco Asbestos Company 74
Emsco Derrick & Equipment Company
Engineering Laboratories, Inc.
Ensign Carburetor Company, Ltd.
Ethyl Gasoline Corporation

F

First National Bank of Fort Worth
First National Bank in Houston
First National Bank & Trust Co. of Tulsa, The
Fisher Governor Company
Fluid Packed Pump Co.
Fluor Corporation, Ltd., The
Ford Motor Co.
Fort Worth Chamber of Commerce
Fort Worth Clearing House Association
Fort Worth National Bank, The
Foster Wheeler Corp.
Four Wheel Drive Auto Company
Foxboro Co., The
Franks Mfg. Co.
Frick-Reid Supply Corporation
Frisco Lines 78

G

Gardner-Denver Company
Garlock Packing Company, The 68
Gaso Pump & Burner Mfg. Co.
Gasoline Products Co., The
Gates Rubber Co., The
Gatke Corporation 75
General American Transportation Corporation—Terminal Division
General Electric Company
General Paint Corporation
General Power, Inc.
Geological Scientific Service Company
Geophysical Service, Inc.
Gilmer Company, L. H.
Girdler Corporation, The 62
Goodall Rubber Co.
Goodrich Company, B. F., The 3
Goodyear Tire & Rubber Co.
Gott, H. P., Mfg. Co. 80
Graver Tank & Mfg. Co., Inc.
Gray Processes Corporation, The
Great Lakes Steel Corporation
Green Head Bit & Supply Co.
Gulberson Corporation
Gulf Oil Corp.
Gulf States Utilities Co.

H

Halliburton Oil Well Cementing Co.
Hanlon-Buchanan, Inc.
Hanrahan, W. G. (Bill)
Harlev Sales Co.
Harnischfeger Corporation
Harrisburg Steel Corporation
Hazard Wire Rope Division of American Chain & Cable Co., Inc.
Hewitt Rubber Corp.
Hill-Hubbell & Co.
Houston Engineers, Inc.
Houston Pipe Appliance Co.
Hughes Tool Co. Front Cover
Humble Oil & Refining Co.
Hydril Co.

I

Independent Exploration Company
Industrial Engineering Co.
Inferno Co., The
Ingersoll-Rand Co.
International Harvester Co.
International Nickel Company, Inc., The

J

Jadson Motor Products Company
Jarecki Manufacturing Company
Jensen Brothers Manufacturing Co.
Jerguson Gage & Valve Co.
Johns-Manville Corporation
Jones Company, The S. M.
Jones & Brooks, Inc.
Jones & Laughlin Steel Corporation

K

Kellogg, M. W., Company, The
Kennedy Valve Mfg. Co., The
Kerotest Manufacturing Company
Keuffel & Esser Co.
Key Company
Kobe, Incorporated 10

L

Laminated Shim Company, Inc.
Landis Machine Company, Inc.
Lane-Wells Co., The
Larkin Packer Company, Inc. 26
Layne & Bowler, Inc.
Leeds & Northrup Co.
Le Roi Company
Leschen, A., Sons Co.
Lincoln Electric Company, The
Line Scale Co., Inc.
Link-Belt Company 71
Lockheed Aircraft Corporation
Lone Star Cement Corporation
Long, S. A., Co., Inc.
Lucey Export Corporation
Ludlow Valve Mfg. Co., The
Lufkin Foundry & Machine Co.
Lufkin Rule Co. 68
Lummus Co., The 4
Lunkenheimer Co., The

Mc

McEvoy Company
McGregor Working Barrel Company 83
McKissick Products Corp.

M

MacClatchie Manufacturing Company 74
Macwhyte Co.
Magnolia Airco Gas Products Co.
Maloney Tank Mfg. Co.
Manhattan Rubber Mfg. Division
Manning, Maxwell and Moore, Inc. 71
Marley Company, The
Marmon-Herrington Co., Inc.
Marsh, James J., Corp.
Martin-Decker Corp.
Mayfair Hotel 83
Medart Company
Meehanite Research Institute
Merco Centrifugal Co.
Merco Nordstrom Valve Co.
Mercoid Corporation
Metric Metal Works
Mid-Continent Engineering Co., Inc.
Mid-Continent Supply Company
Midwest Piping & Supply Company, Inc., The
Miller Sand Pump Co.
Minneapolis-Moline Power Implement Company
Mission Mfg. Co., The 29
Monsanto Chemical Company
Morse Chain Company 6
Murray Rubber Company 68

N

National Bank of Tulsa
National Carbon Co., Inc.
National Production Co. 75
National Steel Corporation
National Supply Co., The 46-47
National Transit Pump & Machine Co. 54
National Tube Co.
Nelson, J. B. 74
New Bedford Cordage Co.
Newman, Hender & Co., Ltd.
Norton Company
Novo Engine Co.
Nugent, Wm. W., & Co., Inc.

O

O.C.S. Mfg. Co., The
Ohio Injector Co., The
Oil Center Tool Co.
Oil Well Supply Co. 36
Oliver United Filters, Inc.
Osage Metal Company
Otis Pressure Control, Inc.

P

Page Fence Association
Page Steel & Wire Division of American Chain & Cable Co. 58
Parkersburg Rig & Reel Co.
Parkhill Truck Co.
Parkhill-Wade
Patterson-Ballagh Corporation 78
Pease, C. F., Company, The
Peerless Pump Division of Food Machinery Corp.
Penberthy Injector Co. 25
Pennsylvania Grade Crude Oil Association
Perco, Inc. 57
Petroleum Advisers, Inc.
Petroleum Electric Power Association 30
Petroleum Rectifying Company
Phelps Dodge Refining Corporation
Pittsburgh-Des Moines Steel Company
Pittsburgh Equitable Meter Co.
Pittsburgh Steel Company
Plymouth Cordage Co.
Poist Tool Co.
Powell, Wm., Co., The 48
Price, H. C., Co.
Pritchard, J. F., & Co.
Producing Equipment Directory
Pure Oil Co.

R

Reading-Pratt & Cady Division of American Chain & Cable Co.
Rector Well Equipment Co., Inc.
Reda Pump Co.
Reed Roller Bit Company 40A-40B-40C-40D-40E-40F
Regan Forge & Engineering Co.
Reilly Tar & Chemical Corporation
Republic Rubber Division of Lee Rubber & Tire Corp. 61
Republic Steel Corporation 7
Rockford Drilling Machine Division of Borg-Warner Company
Roebling's Sons Company, John A.
Ryerson & Son, Inc., Joseph T.

S

Safety Gas Main Stopper Co.
Schlumberger Well Surveying Corporation
Sealed Power Corp.
Security Engineering Co.
Seismic Explorations, Inc.
Seismograph Service Corp.
Shafer Bearing Corporation
Shand & Jurs Co.
Shell Oil Company, Incorporated
Sinclair Refining Company, Inc. 66
Skinner Co., M. B.
Smith, A. O., Corporation
Smith Company, E. M.
Smith Company, Howard
Smith, H. C., Oil Tool Co. 75
Smooth-On Mfg. Co., Inc.
Socony-Vacuum Oil Co., Inc.
South Chester Tube Co.
Southwestern Gas & Electric Company
Spang Chalfant, Inc.
Spang & Company
Sperry-Sun Well Surveying Co.
Spicer Mfg. Corp.
Standard Bag Mfg. Co.
Standco Brake Lining Co. 74
Stanley Belting Corporation
Star Drilling Machine Co., The
Stearns-Roger Manufacturing Co.
Steel Founders' Society

T

Tansel Petroleum Co.
Taylor Forge & Pipe Works
Taylor Instrument Companies
Technical Oil Tool Corporation, Ltd.
Texaco Development Corporation
Thermoid Company
Timken-Detroit Axle Co.
Timken Roller Bearing Company
Timken Roller Bearing Company, Steel and Tube Division
Tobin, Edgar, Aerial Surveys 53
Toledo Pipe Threading Machine Co., The
Tretolite Company
Trinity Portland Cement Company
Tubbs Cordage Co.
Tube-Turns, Inc.
Tulsa Boiler & Machinery Co.
Tulsa Chamber of Commerce
Twin Disc Clutch Co.

U

Underwood Elliott Fisher Co. 70
Union Wire Rope Corporation
Unit Rig & Equipment Company
United Gas Pipe Line Co.
United Geophysical Co.
United States Rubber Company
United States Steel Corp., Subsidiaries 36
United States Steel Export Company
Universal Atlas Cement Co.
Universal Exploration Co.
Universal Oil Products Co. 43

V

Vickers, Inc.
Viking Pump Co.
Visco Products Company
Vogt, Henry, Machine Co.

W

Walker, W. L., Co. 53
Wall-Colmonoy Corp.
Wall Rope Works, Inc. 74
Walworth Co.
Warren Petroleum Corporation
Waukesha Motor Co.
Wedge Protectors, Inc.
Well Equipment Manufacturing Corp.
Well Surveys, Inc.
Western Geophysical Company
Westinghouse Electric & Mfg. Co.
Wheeling Machine Products Company
Whitney Chain & Mfg. Co.
Wickwire Spencer Steel Company
Wilson Manufacturing Co., Inc.
Wisconsin Motor Corporation
Witte Engine Works
W-K-M Company, Inc.
Worthington Pump & Machinery Corporation
Wyatt Metal & Boiler Works

Y

Youngstown Sheet & Tube Co. Inside Back Cover

The Oil Man's Calendar Appears on Page 28